HITACHI

STABRO LAB

MODEL VC-6015
DIGITAL STORAGE OSCILLOSCOPE

SERVICE MANUAL

STABRO LAB
TECHNICAL REF
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DOCUMENT CONTROL ADMINISTRATOR

Hitachi Denshi, Ltd.
Tokyo Japan

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CONTENTS

1. Standards and specifications 1
2. Composition 4
3. Preventive maintenance 4
4. Adjustment 5
   - 4.1 Required test equipment 5
   - 4.2 Preliminary procedure 7
   - 4.3 Preliminary control setting 7
   - 4.4 Initial starting procedure 8
5. Electrical parts arrangement (With Adjustment Locations) 21
6. Electrical parts list 27
   - ◇1 POWER UNIT 27
   - ◇2 PR AMP UNIT 28
   - ◇3 V AMP UNIT 30
   - ◇4 TRIG UNIT 31
   - ◇5 SWEEP UNIT 32
   - ◇6 VR UNIT 33
   - ◇7 AD UNIT, ◇8 ◇9 CONT UNIT 33
   - PANEL and OTHERS 36
7. Schematic diagrams 39
   - ◇1 POWER UNIT 39
   - ◇2 PR AMP UNIT 41
   - ◇3 V AMP UNIT 43
   - ◇4 TRIG UNIT 45
   - ◇5 SWEEP UNIT 47
   - ◇6 VR UNIT 49
   - ◇7 AD UNIT 51
   - ◇8 CONT UNIT 1/2 53
   - ◇9 CONT UNIT 2/2 55
8. Mechanical parts list and exploded view 57

NOTICE

This Service Manual describes the most typical product of this model. If there are any specific differences between this Manual and the servicing unit, please contact Hitachi Denshi sales office in your area.

MODEL VC-6015

DIGITAL STORAGE OSCILLOSCOPE

Service Manual

1. STANDARDS AND SPECIFICATIONS

o Vertical deflection

Input sensitivity	5 mV/div to 5 V/div (1,2,5-step 10 stages)
Sensitivity accuracy	±3 %
rate	Attenuates continuously to 2.5 times or more of the indicated value in each range
Frequency bandwidth (8 div Reference)	DC to 10 MHz ($^{+1}_{-3}$ dB)
	AC 20 Hz to 10 MHz ($^{+1}_{-3}$ dB)
Rise time	less than 35 ns
Overshoot	±3 % (at 100 kHz, rise time less than 100 ns)
Input impedance	Direct 1 MΩ, approx. 30 pF
Maximum input voltage	Direct 250 V (DC + AC peak at 1 kHz)
	When using probe 600 V (DC + AC peak at 1 kHz)
Input coupling	AC-GND-DC
Operation mode	OSC: CH1, CH2, DUAL, ADD, DIFF
	Store: CH1 (CH2 HOLD)
	CH2 (CH1 HOLD)
	DUAL

o Horizontal deflection

Sweep mode	AUTO, NORM
Sweep time	OSC: 1 μs/div - 0.2 s/div (1,2,5 step 17 stages)
	Store: 0.1 ms/div - 1 s/div (1,2,5 step 13 stages)
Maximum sweep time	100 ns (at MAG x10)

Sweep variable	2.5 times or more
Sweep time accuracy	±3 % (at x1)
	±5 % (at x10 MAG)
Sweep magnification	x10
Time linearity	±3 % (at x1)
	±5 % (at x10 MAG)
Position adjustment	Possible

o Triggering

Coupling	Internal: AC
	External: DC
Triggering polarity	+, -

Triggering sensitivity and frequency

Frequency	Internal	External
20Hz-2MHz	0.5 div	200 mV
2MHz-10MHz	1.5 div	800 mV

External trigger input impedance	Approx. 1 MΩ, approx. 30 pF
Maximum input voltage	Direct 250 V (DC + AC peak at 1 kHz)
	At using x10 probe 600 V (DC + AC peak at 1 kHz)

o Z-AXIS brightness modulation

Voltage	Brightness is reduced with a positive signal of +5 V or more.
Frequency bandwidth	DC to 2 MHz
Input impedance	Approx. 47 kΩ
Maximum input voltage	30 V (DC + AC peak at 1 kHz)

o X-Y operation

X input	CH1
Y input	CH2
Sensitivity	Same as vertical axis
X frequency bandwidth	DC to 500 kHz (-3 dB)
Phase shift	Within 3° (DC to 50 kHz)

o Memory

Memory capacity	1000 words/channel (1 word = 8 bit)
Writing speed	1 μs/word to 1 ms/word

o External output

RECORDER (Storage mode)	Simultaneous CH1 and CH2 outputs, fullscale ±4 V, output time selected as either 5 or 10 s/div X signal for X-Y recorder 0 to 10 V (10 bit)

o Calibrator

Waveform	1 kHz square wave, within ±30 %
Voltage	0.5 V ±3 %

o CRT

CRT	150 BTB 31 (IG) (6"-diameter storage tube)
Acceleration voltage	Approx. 2 kV
Screen area	8 div x10 div, 1 div = 10 mm
Trace rotation	Provided
Scale illumination	Variable edge lighting

Power supply

VOLTAGE	FUSE
100 V (90 - 110 V)	2 A
120 V (108 - 132 V)	2 A
220 V (198 - 242 V)	1 A
240 V (216 - 264 V)	1 A

Power supply frequency	50/60 Hz
Power consumption	Approx. 60 W

o Environment

Rated range of use:	+10 to +35 °C (+50 to +95 °F)
Limit of operation:	0 to +40 °C (+32 to +104 °F)
Storage and transport:	-20 to +70 °C (-4 to 158 °F)
Operating ambient humidity:	45 to 85 %

o Construction

Dimensions	Approx. 310(W) x 180(H) x 410(D) mm (12.2(W) x 7.1(H) x 16.1(D) inch)
Weight	Approx. 10 kg

2. COMPOSITION

(1) Model VC-6015 Digital Storage Oscilloscope 1
(2) Probe (AT-10 AK 1.5) 2
(3) Power supply cord 1
(4) Operation Manual 1
(5) Dustproof Cover 1

3. PREVENTIVE MAINTENANCE

Preventive maintenance, when performed on a regular basis, can prevent instrument breakdown and may improve the reliability of the oscilloscope. The severity of environment to which this instrument is subjected will determine the frequency of maintenance. A preventive maintenance is recommended to be performed before preceding recalibration of the instrument.

Disassembly

Remove the 4 screws on the top cover of the instrument. Remove the top cover from the instrument and lay aside. Most of the internal parts of the instrument are now accessible.

(See 5.ELECTRICAL PARTS ARRANGEMENT.)

Cleaning

The instrument should be maintained clean. Accumulation of dust in the instrument can cause component breakdown.

The covers provide protection against dust from the instrument interior. Loose dust accumulated on these covers can be removed with a soft cloth or small brush.

Dirt that remains can be removed with a soft cloth dampened in a mild solution of detergent. Abrasive cleaners should not be used.

Cleaning the interior should only be occasionally necessary. The best way to clean the interior is to blow off the dust with a dry, low-velocity stream of air. A soft-bristle brush or a cotton-tipped applicator is useful for cleaning in narrow spaces or for cleaning more delicate components.

Visual Inspection

The instrument should be inspected occasionally for such defects as broken connections, improperly seated transistors, damaged circuit boards, and heat-damaged parts. The corrective procedure for most visible defects is apparant; however, particular care must be taken if heat-damaged components are found. Overheating usually indicates other trouble in the instrument; therefore, correcting the cause of the overheating is important to prevent recurrance of the damage.

4. ADJUSTMENT

Hitachi Denshi, Ltd. provides complete instrument repair and recalibration at our oversea's offices, and authorized dealers. Contact your local Hitachi Denshi, Ltd. office or representative.

4.1 Required test equipment

The following test equipment and accessories, are required for the calibration of the VC-6015. All the test equipment is assumed to be correctly calibrated and operating within the listed specification, operating instructions for the test equipment are not given in this procedure. Refer to the instruction manual for the test equipment if more information is needed.

Table 4-1

TEST EQUIPMENT REQUIRED

Description	Minimum Specification	Usage	Examples of Applicable Test Equipment
1. Constant Amplitude Signal Generator	50kHz reference frequency; maximum frequency 50MHz; variable amplitude	To check horizontal, vertical and trigger bandwidth.	
2. Standard Amplitude Calibrator	Amplitude accuracy: 0.25%, variable amplitude; 5mV to 40V; frequency: 1 kHz square wave	To check horizontal and vertical gain.	
3. Square-wave Generator	Variable frequency; 10 Hz to 1 MHz; output amplitude; 10 mV to 100 V	To check probe and vertical compensation.	
4. Digital Multimeter	0.1 % accuracy	To check power supply.	
5. Time Mark Generator	0.1 % accuracy	To check horizontal timing.	
6. Cable	Impedance, 50 ohms; type, RG-58/U; length, 42 inches, connectors, BNC.	External trigger operation check. Horizontal gain check and adjustment.	Hitachi Part No.4202
7. Termination	Impedance, 50 ohms; connectors, BNC.	Vertical Amplifier compensation checks and adjustment.	
8. Attenuator	Ratio, 10x; connectors, BNC; impedance, 50 ohms	Vertical Amplifier bandwidth check.	
9. T-Connector	Connectors, BNC.	External trigger operation checks.	Hitachi Part No.1301

4.2 Preliminary procedure

This instrument should be calibrated at an ambient temperature of +20°C (±5°C) for best overall accuracy.

1. Connect the power cord to AC line voltage, 50/60 Hz line source.
2. See the Adjustment Locations.

4.3 Preliminary control setting

Set the controls as shown below, and allow at least fifteen minutes of warmup before proceeding.

Table 4-2

PRELIMINARY CONTROL SETTING

POWER SCALE ILLUM	OFF
INTENSITY	Midposition
FOCUS	Midposition
TRACE ROTATION	Midposition
LEVEL PULL(-) SLOPE	Midposition, push-in
SOURCE	CH1
MODE (TRIGGER)	⊓ AUTO
PRE TRIG	0 DIV
SWEEP VAL.	CAL, fully clockwise
POSITION PULL X10 MAG	Midposition, push-in
TIME/DIV	.1 ms/DIV
DISPLAY	OSC
MODE (V. MODE)	DUAL
AC-GND-DC	GND
VOLTS/DIV	5 mV
VARIABLE	CAL, fully clockwise
POSITION	Midposition
PULL STORE POS	Midposition, push-in

4.4 Initial starting procedure

1. Rotate the POWER/SCALE ILLUM control.
2. Allow a few seconds for the cathode ray tube (CRT) to warm up. A trace will then appear on the face of the CRT.
3. If no trace appears, increase (clockwise) the INTENSITY control setting until the trace is easily observed.
4. Adjust the FOCUS control for the thinnest and sharpest possible trace.
5. Readjust POSITION control if necessary, to center the trace.

POWER SUPPLY SYSTEM

NOTE

First, see Adjustment Locations.

Control Settings

Set the controls according to item 4.3 Preliminary Control Setting.

(1) Check Low-voltage Supply, if necessary.

a. Connect the digital voltmeter (DVM) from the +5 volt line.

:+5 V ±0.25 V

b. Connect the DVM from the +12 V line.

:+12 V ±0.6 V

c. Connect the DVM from the -12 V line.

:-12 V ±0.6 V

d. Connect the DVM from the +150 V line.

:+150 V ±15 V

e. Connect the DVM from the +250 V line.

:+250 V $^{+50\ V}_{-20\ V}$

(2) Check High Voltage Supply.

a. Connect the DVM to the H. V test point.

b. Check a reading of -1900 V ±100 V.

(3) Check and adjust Grid Bias.

a. Rotate the INTENSITY control to the "T" letter of the "INTENSITY" as shown.

Fig. 4-1

b. Observe the trace of CRT.

c. If the trace doesn't appear on CRT, or appears before reaching the above position, adjust Grid Bias Adjustment RV1021 on the PEF-591 unit.

④ Check and adjust TRACE ROTATION.

a. Set the TIME/DIV switch to 1 ms/div.

b. Check that the trace is parallel to the center horizontal line.

c. Adjust the TRACE ROTATION control so that a trace becomes parallel with the horizontal graticule lines.

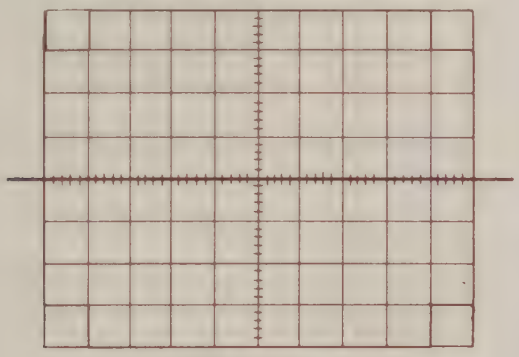


Fig. 4-2

⑤ Check and adjust GEOM (geometry).

a. Set the TIME/DIV switch to 1 ms/div, and AC-GND-DC switch to DC.

b. Connect the constant amplitude signal generator to the input.

c. Set the VOLTS/DIV switch for a full-screen (8 divisions) deflection.

d. Check that horizontal bowing is less than $\pm$0.19 div.

e. Adjust the GEOM control RV1033 on the PEF-592 unit so that the display becomes parallel with top and bottom horizontal lines.

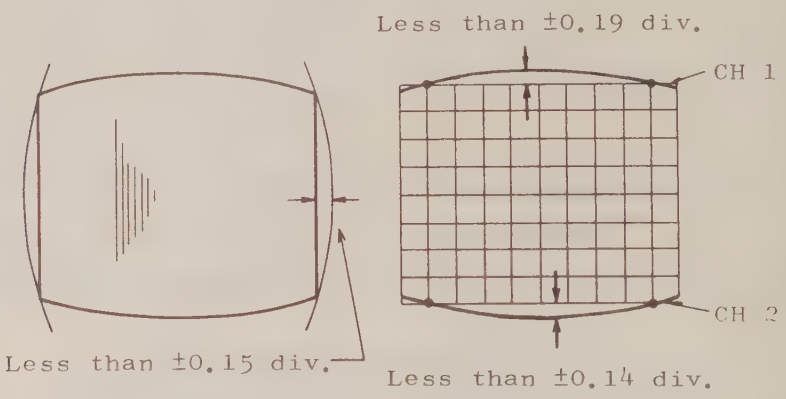


Fig. 4-3

NOTE;

Also it is possible to make the adjustment of the GEOM as follow.

a. Set the vertical MODE to the DUAL.

b. Rotate the POSITION (CH1) control to set the trace at the top of the screen.

c. Rotate the POSITION (CH2) control to set the trace at the bottom of the screen.

d. Check and adjust as before.

⑥ Check and adjust ASTIG (astigmatism) and FOCUS.

a. Set the TIME/DIV switch to the X-Y position, and the Vertical MODE switch to the CH2/X-Y position.

b. Set the INTENSITY control to make a small spot near the center screen adjusting the POSITION controls.

c. Check that the spot is round.

d. Adjust the FOCUS control and the ASTIG control RV1035 on the PEF-592 unit to make a round spot.

HORIZONTAL SYSTEM

Control Setting

Preset the controls as given in the Preliminary Control settings.

⑦ Check/Adjust Horizontal Gain (Sweep Cal.).

a. Set the TIME/DIV switch to the 1 ms.

b. Set the horizontal gain for a x1 MAG.

c. Set the input AC-GND-DC switch to DC.

d. Connect the cable to the output of the time mark generator.

e. Set the time mark generator for 1 ms time marks.

f. Check that the time marks align with the graticule lines over the center eight divisions.

g. Adjust RV830 on the PEF-598 unit at that the time marks align with the center eight graticule lines.

h. Check all other ranges of timing within 3 %. Use appropriate settings on the time mark generator.

i. Set x10 MAG (pull out).

j. Adjust RV831 on the PEF-598 unit so that one-cycle time marks align with the ten-divisions graticule lines.

k. Check all the TIME/DIV switch settings.

⑧ Check and adjust High Speed Sweep Accuracy.

a. Set the TIME/DIV switch to the 10 μs.

b. Set the time mark generator for 10 μs time marks.

c. Check that the time marks align with the graticule lines over the center eight divisions.

d. Adjust CV510 on the PEF-598 unit at that the time marks align with the center eight graticule lines.

e. Check all other ranges of timing within 3 %.
Use appropriate settings on the time mark generator.

VERTICAL SYSTEM

Preset the controls as given in the Preliminary Control Settings.

⑨ Check and adjust DC Balance (Step attenuator balance).

a. Set the VOLTS/DIV switch to the 5 mV/div.

b. Position the trace to the horizontal center line.

c. Change the VOLTS/DIV switch to the 10 mV/div.

d. Check that the trace is within 0.1 division of the center horizontal line.

e. Adjust the DC BAL control, RV27 (CH1) or RV127 (CH2) on the PEF-591 unit , to make a trace at the horizontal center line.

f. Repeat part (a) through (e) until less than 0.05 division shift is noted when changing the VOLTS/DIV setting.

⑩ Check and adjust Vertical Position Center.

a. Confirm the vertical POSITION control at the midposition.

b. Check the trace is within 1 division.

c. Adjust the Position Center adjustment RV97 (CH1), RV197 (CH2) on the PEF-591 unit for a trace at the horizontal center line.

⑪ Check and adjust AC GAIN.

a. Set the TIME/DIV switch to the 1 ms position.

b. Set the VOLTS/DIV switch to the 5 mV position.

c. Set the AC-GND-DC switch to DC.

d. Connect the Square-wave Generator (using 1 kHz output range).

e. Adjust the output amplitude of that generator for more than 4 division deflection of screen.

f. Check the high-voltage level of pulse is flat.

g. Adjust the AC GAIN RV33 (CH1), RV133 (CH2) on the PEF-591 unit, adjustment to make a flat level.

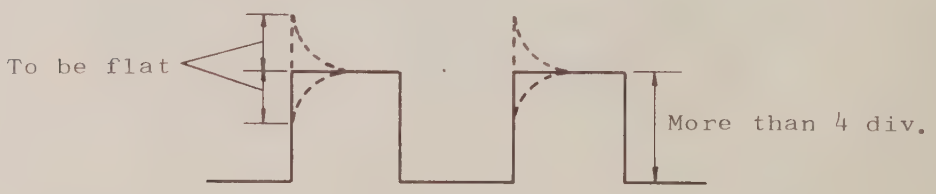


Fig. 4-4

⑫ Check and adjust Vertical Gain.

a. Set the VOLTS/DIV switch to the 5 mV position and AC-GND-DC switch to DC.

b. Connect the standard amplitude calibrator to the input.

c. Set the standard amplitude calibrator for a 20 mVp-p (4 divisions of display) signal.

d. Make sure that the display is in 4 divisions.

e. Adjust RV353 (CH1) on the PEF-592 unit, for a display of 4 divisions $\pm$3 %.

f. Adjust RV184 (CH2) on the PEF-591 unit, for a display of 4 divisions $\pm$3 %.

g. Check all the VOLTS/DIV switch settings.

⑬ Check and adjust Vertical Step Response.

a. Set the VOLTS/DIV switch to the 5 mV position.

b. Set the TIME/DIV switch to the 5 μs position, if necessary, to the 2 μs position.

c. Pull the x10 MAG switch out for a magnified display.

d. Connect a fast-rise, positive output of the square-wave generator to input. Use a 50-ohm termination and cable.

e. Set the square-wave generator to 100 kHz. Adjust the square-wave generator output for a 5 divisions display.

f. Position the positive-going signal in the center of the graticule, with the top of the square wave visible.

g. Adjust CV359 on the PEF-592 unit, for a square wave that is flat.

And adjust CV316 on the PEF-592 unit, for overshoot that is +0.1 div.

⑭ Check and adjust Attenuation Compensation.

a. Set the VOLTS/DIV switch to the 0.1 V position and AC-GND-DC switch to DC.

b. Connect the square-wave generator to the input for a 0.5 V (1 kHz) signal.

c. Confirm that the waveform has flat tops.

d. Adjust CV7 (CH1), CV107 (CH2) on the PEF-591 unit to make a square wave with flat tops.

e. Set the VOLTS/DIV switch to the 1 V position.

f. Set the square-wave generator for a 5 V (1 kHz) signal.

g. Confirm that the square wave has flat tops.

h. Adjust CV12 (CH1), CV112 (CH2) on the PEF-591 unit to make a square wave with flat tops.

Fig. 4-5

⑮ Check and adjust Attenuation's Input Capacity

a. Connect the L-C meter to the input connector.

b. Adjust the trimmer condensers for a 32 pF input capacity under the following settings.

ATT	VOLTS/DIV	Adjust CH1	(CH2)
÷ 10	0.1 V	CV6	(CV106)
÷ 100	1 V	CV11	(CV111)

(PEF-591 unit)

⑯ Check and adjust Probe Compensation.

a. Set the VOLTS/DIV switch to the 5 mV position.

b. Connect a square-wave generator to the input. Use a probe AK1.5 (at the x10 position).

c. Set the square-wave generator for a 0.2 V signal.

d. Adjust the LEVEL control for a stable display triggered on the positive excursion of the waveform.

e. Check that positive excursion of the displayed square wave has flat tops.

f. Adjust the trimmer capacitance of the probe, so that the display has flat tops.

⑰ Check and adjust CAL terminal (0.5 Vp-p).

a. Set the VOLTS/DIV switch to the 0.1 V position.

b. Connect the CAL to the input.

c. Check for a display of 5 divisions.

d. Adjust RV1203 on the PEF-593 unit , for a display of 5 divisions ±3 %.

⑱ X-Y operation

18-1 Check and adjust X Position Center.

a. Set the TIME/DIV switch to X-Y, the vertical Mode Switch to CH2 X-Y, the horizontal POSITION control to the midposition and the input coupling switch of CH1 to GND.

b. Check to see that the round spot is near the center graticule and is within 0.2 division against horizontal line.

c. Adjust the X CENT adjustment RV64 on the PEF-591 unit to the position spot at the center.

18-2 Check and adjust X Gain

a. Set the TIME/DIV switch to X-Y.

b. Set the AC-GND-DC switch of CH1 to AC, the AC-GND-DC switch of CH2 to GND.

c. Set the VOLTS/DIV switch to the 5 mV position, with x1 GAIN.

d. Connect the standard amplitude calibrator to the CH1 input.

e. Set the standard amplitude calibrator for a 20 mV.

f. Check for a display of 4 divisions.

g. Adjust RV402 on the PEF-597 unit for a display of 4 divisions.

⑲ Adjustment of the reference voltage of A/D converter

a. Adjust RV1652 (CH1) and RV1653 (CH2) on PEF-599 so that -0.5 V is obtained at the reference voltage input pin ⑬ of the A/D converter. [IC 2B(CH1), 2A(CH2) on the PEF-599 unit.]

⑳ Full-scale position center adjustment

a. Set the controls and switches as follow:

DISPLAY ⟶ STORE
V.POSITION ⟶ Mid-position
PULL STORE POSI ⟶ Depressed position
TIME/DIV ⟶ 0.1 ms
TRIG SOURCE ⟶ CH1, CH2
V.MODE ⟶ CH1, CH2
AC-GND-DC ⟶ DC
TRIG MODE ⟶ AUTO
VOLTS/DIV ⟶ 5 mV

b. Apply a sinewave of 80 mV p-p with 10 kHz.

c. Write in a full-scale waveform, then adjust the level (B) in Fig. 4-6 to the -4 div position by means of RV1553 (CH1) and RV1574 (CH2) on PEF-599 unit.

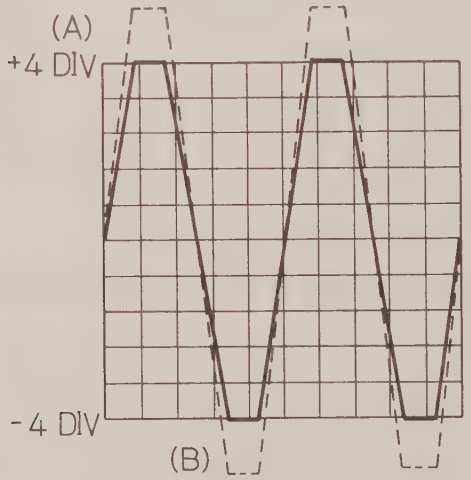


Fig. 4-6

㉑ Adjustment of full-scale GAIN

a. Set the controls and switches as instructed in ⑳ .

b. Adjust the level (A) in Fig. 4-6 to the +4 div position by means of RV1556 (CH1) and RV1573 (CH2) on PEF 599 unit . (within ±0.2 div.)

㉒ GAIN adjustment of A/D converter

a. Set the controls and switches other than DISPLAY as instructed in ⑳ .

Set the DISPLAY switch to OSC mode.

b. Apply a square wave of 20 mV p-p for calibration.

c. Set DISPLAY to STORE, and adjust RV1407 (CH1) and RV1408 (CH2) on PEF-591 unit to the same level (within ±0.2 div.).

㉓ POSITION adjustment of A/D converter

a. Follow the procedures ㉒ -a and -b.

b. Adjust RV1409 (CH1) and RV1410 (CH2) on PEF-591 so that the levels become equal when DISPLAY is switched to OSC and STORE (within ±0.2 div.).

(Repeat procedures ㉒ and ㉓ .)

㉔ Adjustment of X axis on screen

a. Set TIME/DIV to 1 ms.

b. Apply the output signal from the 1 ms time marker.

c. Adjust RV1595 (POSITION) and RV1590 (GAIN) so that the levels become equal when the DISPLAY is switched to OSC and STORE.

RECORDER SYSTEM

㉕ Adjustment of bright spot on X axis of the recorder

a. Set the controls and selectors as follow:

AC-GND-DC ⟶ GND

TRIG MODE ⟶ AUTO

DISPLAY ⟶ RECORD

FREERUN DISPLAY TIME ⟶ 5 sec/div. (fully clockwise)

b. Sweep once in STORE mode.

c. Press START/RESET switch in the RECORD mode.

d. Allow 5 seconds for a bright spot to appear on screen. Adjust RV1429 on PEF-599 so that the bright spot is positioned at the left end of screen (within ±0.4 div.).

e. Adjust RV1430 on PEF-599 so that the bright spot remains at the right end of the screen until the recorder output is completed (within ±0.8 div.).

f. Repeat the above procedure several times to obtain an optimum condition.

NOTE; Set RECORD TIME switch on the rear to OFF to facilitate the adjustment.

㉖ Adjustment of recorder outputs CH1, CH2 and X

a. Set controls and switches as follow;

DISPLAY ——→ STORE
V MODE ——→ DUAL
TIME/DIV ——→ 0.1 ms
AC-GND-DC ——→ DC
TRIG MODE ——→ NORM

b. Apply a 250 Hz square wave so that it displays fully on 8 div area.

c. Store the wave shown in Fig. 4-8 in STORE mode.
(Trigger the signal in OSC mode, so that 0 level appears first on screen.)

d. Set RECORD TIME on the rear to 5 sec.

e. Set DISPLAY to RECORD.

f. Depress START/RESET button.

g. Set the output levels of RECORD OUT CH1 and CH2 to ±4 V with the controls below.

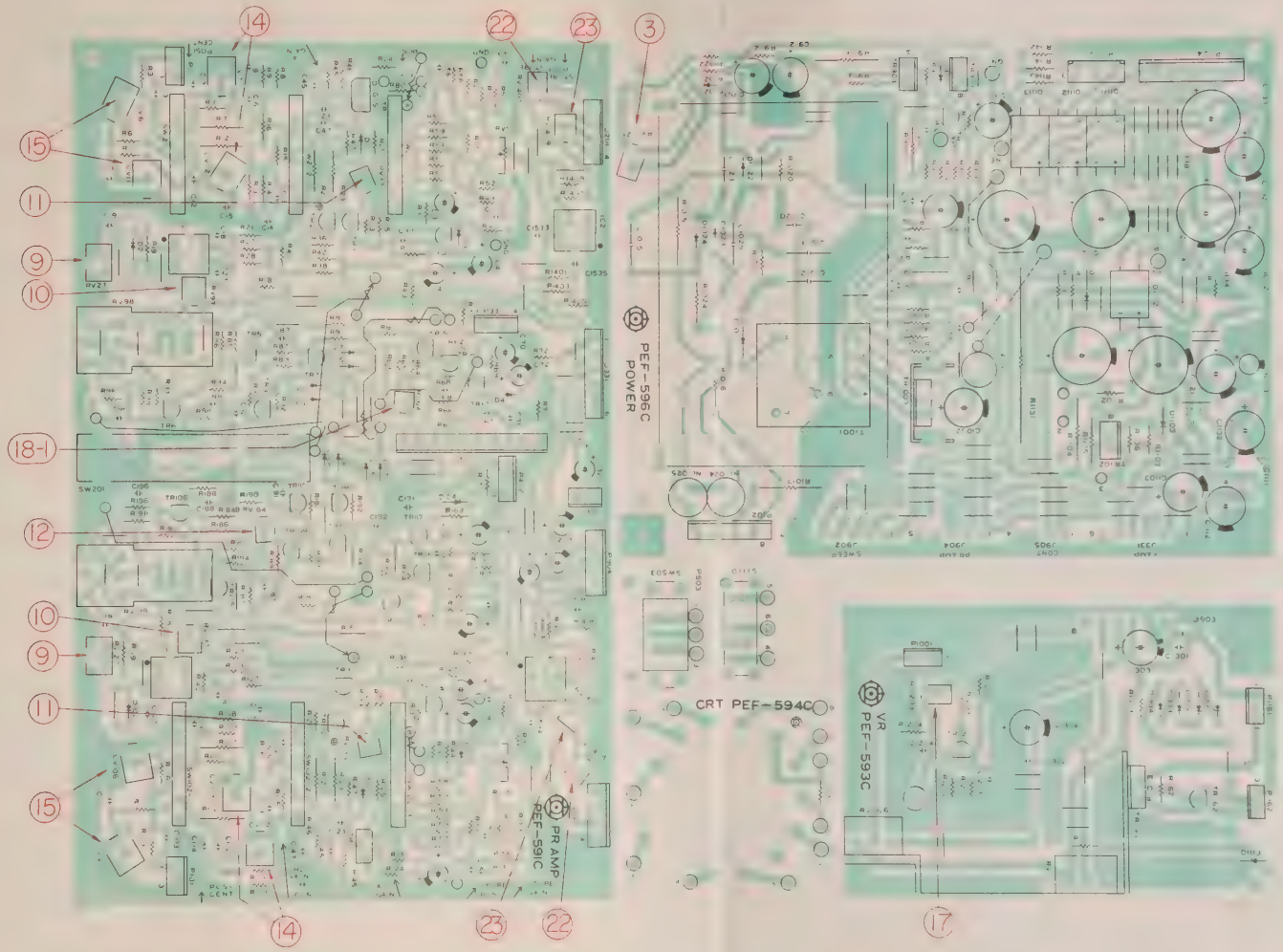
	CH1	CH2
POSITION	RV1577	RV1578
GAIN	RV1581	RV1582

(PEF-599 unit)

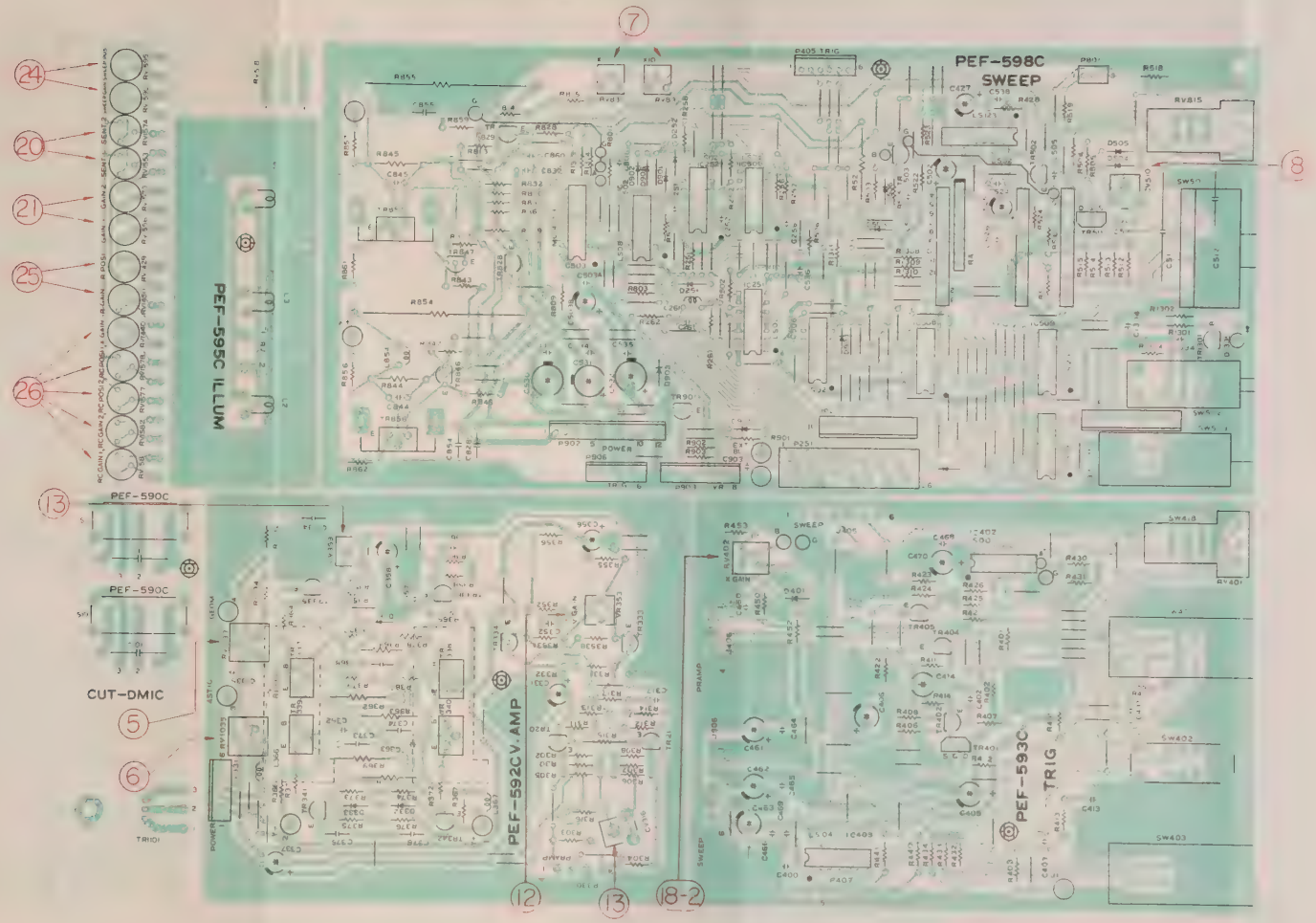
h. Adjust RV1440 so that the X axis output becomes +10 V when the recorder output is completed.

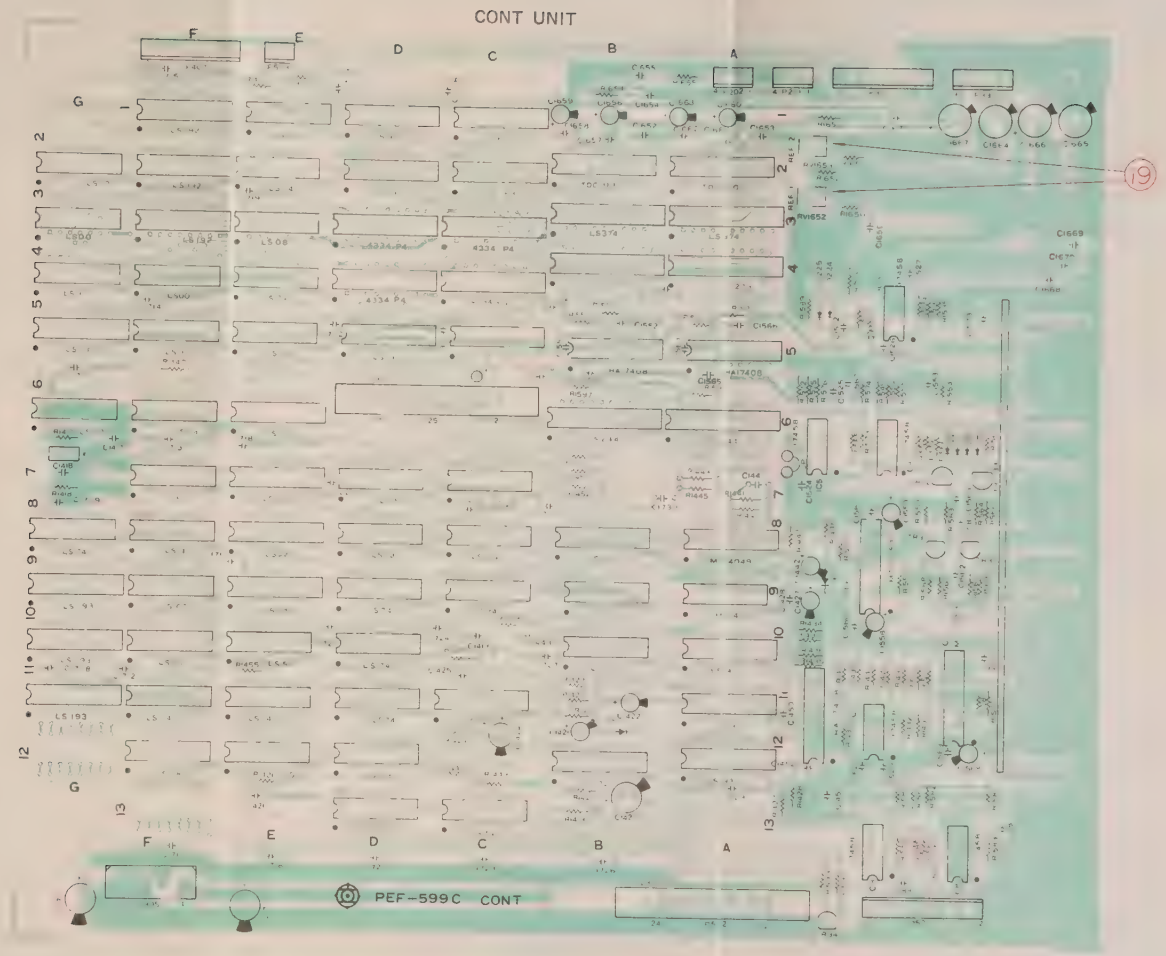
5. ELECTRICAL PARTS ARRANGEMENT (With Adjustment Locations)

POWER, PREAMP, VR UNIT



SWEEP, V.AMP, TRIG, ILLUM UNIT




CONT UNIT
PEF-599C CONT
19

6. ELECTRICAL PARTS LIST

① POWER UNIT

Part Code	Symbol	Description			Remarks
ILT0037	IC1001	IC, Analog	TL081CP		
8338426B	IC1111	IC	HA17812P		
IDM0319	IC1121	IC	UA7912UC		
ILH0108	IC1131	IC	HA17805P		
ILH0108	IC1132	IC	HA17805P		
ILH0108	IC1133	IC	HA17805P		
HTC0148	TR902	Transistor	2SC458-C		
HTD0100	TR903	Transistor	2SD668A-C		
HTC0085	TR904	Transistor	2SC1514		
HTC0032	TR1003	Transistor	2SC1061-C		
HTC0085	TR1101	Transistor	2SC1514		
HTC0085	TR1102	Transistor	2SC1514		
HDH0029	D904	Diode	HZ5B		
HDY0031	D1011	Diode	Y10GA		
HDS0250	D1021	Diode	1SS83		
HDS0250	D1022	Diode	1SS83		
HDS0250	D1023	Diode	1SS83		
HDS0250	D1024	Diode	1SS83		
HDV0022	D1101	Diode	V06G		
HDM0034	D1102	Diode	Stack M4G-1		
HDS0108	D1103	Diode	1S2075		
HDM0033	D1111	Diode	Stack M4C-1		
HDM0033	D1112	Diode	Stack M4C-1		
HDM0033	D1113	Diode	Stack M4C-1		
RCR3096	R904	R, Carbon	1/4W	68kΩ ±5%	
RCR3048	R905	R, Carbon	1/4W	680Ω ±5%	
RCR3028	R906	R, Carbon	1/4W	100Ω ±5%	
RCR3044	R907	R, Carbon	1/4W	470Ω ±5%	
RCR3060	R908	R, Carbon	1/4W	2.2kΩ ±5%	
RMR2807	R910	R, Metal	2W	22kΩ ±5%	
RCR3060	R911	R, Carbon	1/4W	2.2kΩ ±5%	
RCR3028	R912	R, Carbon	1/4W	100Ω ±5%	
RCR3044	R913	R, Carbon	1/4W	470Ω ±5%	
RCR3199	R909	R, Carbon	1/2W	47kΩ ±5%	
RME0818	R1001	R, Metal	1/4W	137kΩ ±1%	
RCR3052	R1002	R, Carbon	1/4W	1.0kΩ ±5%	
RCR3100	R1003	R, Carbon	1/4W	100kΩ ±5%	
RCR3052	R1004	R, Carbon	1/4W	1.0kΩ ±5%	
RCR3076	R1005	R, Carbon	1/4W	10kΩ ±5%	
RCR3036	R1006	R, Carbon	1/4W	220Ω ±5%	
RCR3076	R1011	R, Carbon	1/4W	10kΩ ±5%	
3142076A	R1015	R, Metal	1W	22MΩ ±1%	
RCR3476	R1016	R, Carbon	1/2W	1.8MΩ ±5%	
3142076C	R1017	R, Metal	1W	12MΩ ±5%	
RCR3426	R1020	R, Carbon	1/4W	390kΩ ±5%	
RCR3084	R1021	R, Carbon	1/4W	22kΩ ±5%	
RCR3080	R1022	R, Carbon	1/4W	15kΩ ±5%	
RSE0434	R1024	R, Solid	1/4W	10MΩ ±5%	
RCR3004	R1101	R, Carbon	1/4W	10Ω ±5%	
RCR3004	R1102	R, Carbon	1/4W	10Ω ±5%	
RMR2802	R1104	R, Metal	2W	3.3kΩ ±5%	
RCR3191	R1105	R, Carbon	1/2W	22kΩ ±5%	
RME0740	R1106	R, Metal	1/4W	113kΩ ±1%	
RME0724	R1107	R, Metal	1/4W	20.5kΩ ±1%	
RMR2770	R1121	R, Metal	1W	100Ω ±5%	
RMR2837	R1131	R, Metal	5W	47Ω ±5%	
RCR3104	R1141	R, Carbon	1/4W	470kΩ ±5%	
RCR3088	R1142	R, Carbon	1/4W	33kΩ ±5%	
RCR3100	R1143	R, Carbon	1/4W	100kΩ ±5%	

Part Code	Symbol	Description			Remarks
CCS0017	C903	Capacitor	50V	0.1μF +80% -20%	
CCS0017	C904	Capacitor	50V	0.1μF +80% -20%	
CCC1030	C905	C, Ceramic	50V	10000pF +80% -20%	
CEC0175	C907	C, AL Elyc	25V	10μF ±20%	
CEC0175	C908	C, AL Elyc	25V	10μF ±20%	
CCD0271	C909	C, Ceramic	500V	0.5pF ±0.25pF	
CEC0219	C912	C, AL Elyc	250V	4.7μF ±20%	
CQA0103	C1001	C, Plastic	50V	0.1μF ±10%	
CES0033	C1002	C, AL Elyc	25V	100μF ±20%	
CQA0101	C1005	C, Plastic	50V	47000pF ±10%	
CCD0221	C1012	C, Ceramic	2000V	4700pF ±10%	
CCD0221	C1013	C, Ceramic	2000V	4700pF ±10%	
CCC1207	C1015	C, Ceramic	2kV	100pF ±10%	
CCD0218	C1020	C, Ceramic	500V	10000pF ±10%	
CET0033	C1021	C, AL Elyc	25V	100μF	
CCD0219	C1023	C, Ceramic	2000V	2200pF ±10%	
CCD0221	C1025	C, Ceramic	2000V	4700pF ±10%	
CEC0395	C1101	C, AL Elyc	350V	33μF ±20%	
CEC0484	C1102	C, AL Elyc	250V	47μF ±20%	
CEC0219	C1103	C, AL Elyc	250V	4.7μF ±20%	
CEC0347	C1111	C, AL Elyc	25V	2200μF ±20%	
CES0033	C1112	C, AL Elyc	25V	100μF ±20%	
CEC0347	C1121	C, AL Elyc	25V	2200μF ±20%	
CES0033	C1122	C, AL Elyc	25V	100μF ±20%	
CEC0175	C1131	C, AL Elyc	25V	10μF ±20%	
CES0033	C1132	C, AL Elyc	25V	100μF ±20%	
CEC0347	C1133A	C, AL Elyc	25V	2200μF ±20%	
CEC0347	C1133B	C, AL Elyc	25V	2200μF ±20%	
CES0033	C1134	C, AL Elyc	25V	100μF ±20%	
CES0033	C1135	C, AL Elyc	25V	100μF ±20%	
8348450J	RV1021	VR, Metal	CR29R 47kΩ		
ELL0019	NL1024	Lamp	NE-2		
ELL0019	NL1025	Lamp	NE-2		
3142165	T1001	XFMR	D#3142165		
EFL0016	F1001	Fuse	FR-11 125V DIA6. 3X8.7 1A		
8386020 2	J331	Connector	171822-6		
JYX0320	J902	Recp, Assy	171822-6		
JBX0454	J904	Connector	171825-5		
JMX0201	J905	Connector	171825-5		
JBX0467	P1021	Housing	1-480424-0		
JBX0703	P1104	Connector	171825-8		
JBX0702	P1105	Connector	1-171825-0		

② PR AMP UNIT

Part Code	Symbol	Description	Remarks
ILT0037	IC1	IC, Analog TL081CP	
ILT0037	IC2	IC, Analog TL081CP	
ILT0037	IC101	IC, Analog TL081CP	
ILT0037	IC102	IC, Analog TL081CP	
ILM0350	IC301	IC, Analog UPC7905	
HTK0081	TR1	Transistor 2SK304E	
HTC0167	TR2	Transistor 2SC535-B	
HTC0557	TR3	Transistor 2SC1674K	
HTA0224	TR4	Transistor 2SA1029D	
HTC0167	TR5	Transistor 2SC535-B	
HTC0167	TR6	Transistor 2SC535-B	
HTA0105	TR7	Transistor 2SA836D	
HTA0105	TR8	Transistor 2SA836D	
HTA0099	TR15	Transistor 2SA781K	
HTC0167	TR16	Transistor 2SC535-B	
HTA0099	TR17	Transistor 2SA781K	
HTK0081	TR101	Transistor 2SK304E	
HTC0167	TR102	Transistor 2SC535-B	
HTC0557	TR103	Transistor 2SC1674K	
HTA0224	TR104	Transistor 2SA1029D	
HTC0167	TR105	Transistor 2SC535-B	
HTC0167	TR106	Transistor 2SC535-B	
HTA0105	TR107	Transistor 2SA836D	
HTA0105	TR108	Transistor 2SA836D	
HTA0105	TR109	Transistor 2SA836D	
HTA0105	TR110	Transistor 2SA836D	
HTA0099	TR115	Transistor 2SA781K	
HTC0167	TR116	Transistor 2SC535-B	
HTA0099	TR117	Transistor 2SA781K	
HDS0108	D1	Diode 1S2075	
HDS0108	D2	Diode 1S2075	
HDH0040	D3	Diode HZ7B	
HDH0040	D4	Diode HZ7B	
HDS0108	D5	Diode 1S2075	
HDS0108	D6	Diode 1S2075	
HDS0108	D7	Diode 1S2075	
HDS0108	D8	Diode 1S2075	
HDS0108	D101	Diode 1S2075	
HDS0108	D102	Diode 1S2075	
HDH0040	D103	Diode HZ7B	
HDH0040	D104	Diode HZ7B	
HDS0108	D105	Diode 1S2075	
HDS0108	D106	Diode 1S2075	
HDS0108	D107	Diode 1S2075	
HDS0108	D108	Diode 1S2075	
8348450G	RV27	VR, Metal CR29R 10kΩ	
RNE0028	RV33	VR, Metal EVN-32C A00 B23 (2kΩ)	
RNE0028	RV64	VR, Metal EVN-32C A00 B23 (2kΩ)	
RNE0032	RV97	VR, Metal EVN-32C A00 B54 (50kΩ)	
3142080A	RV98	VR, Carbon 16 type 10KB+50KB with SW	
8348450G	RV127	VR, Metal CR29R 10kΩ	
RNE0028	RV133	VR, Metal EVN-32C A00 B23 (2kΩ)	
RCR3052	RV164	R, Carbon 1/4W 1.0kΩ ±5%	
RNE0024	RV184	VR, Metal EVN-32C A00 B12 (100Ω)	
RNE0032	RV197	VR, Metal EVN-32C A00 B54 (50kΩ)	
3142080A	RV198	VR, Carbon 16 type 10KB+50KB with SW	
RNE0029	RV1407	VR, Metal EVN-32C A00 B53 (5kΩ)	
RNE0029	RV1408	VR, Metal EVN-32C A00 B53 (5kΩ)	
RNE0030	RV1409	VR, Metal EVN-32C A00 B14 (10kΩ)	

Part Code	Symbol	Description	Remarks
RNE0030	RV1410	VR, Metal EVN-32C A00 B14 (10kΩ)	
RCR3012	R3	R, Carbon 1/4W 22Ω ±5%	
RCR3004	R5	R, Carbon 1/4W 10Ω ±5%	
RCR3024	R6	R, Carbon 1/4W 68Ω ±5%	
RME0812	R7	R, Metal 1/2W 900kΩ ±0.5%	
RME0694	R8	R, Metal 1/4W 111kΩ ±0.5%	
RCR3018	R9	R, Carbon 1/4W 39Ω ±5%	
RCR3026	R10	R, Carbon 1/4W 82Ω ±5%	
RCR3028	R11	R, Carbon 1/4W 100Ω ±5%	
RME0813	R12	R, Metal 1/2W 990kΩ ±0.5%	
RME0695	R13	R, Metal 1/4W 10.1kΩ ±0.5%	
RCR3004	R14	R, Carbon 1/4W 10Ω ±5%	
RCR3036	R15	R, Carbon 1/4W 220Ω ±5%	
RCR3020	R16	R, Carbon 1/4W 47Ω ±5%	
RCR3028	R18	R, Carbon 1/4W 100Ω ±5%	
RME0672	R19	R, Metal 1/4W 4.75kΩ ±1%	
RME0828	R20	R, Metal 1/4W 500kΩ ±0.5%	
RME0828	R21	R, Metal 1/4W 500kΩ ±0.5%	
RCR3044	R22	R, Carbon 1/4W 470Ω ±5%	
RSE0434	R23	R, Solid 1/4W 10MΩ ±5%	
RCR3020	R24	R, Carbon 1/4W 47Ω ±5%	
RCR3020	R25	R, Carbon 1/4W 47Ω ±5%	
RCR3092	R26	R, Carbon 1/4W 47kΩ ±5%	
RCR3064	R27	R, Carbon 1/4W 3.3kΩ ±5%	
RCR3060	R28	R, Carbon 1/4W 2.2kΩ ±5%	
RCR3064	R31	R, Carbon 1/4W 3.3kΩ ±5%	
RCR3056	R33	R, Carbon 1/4W 1.5kΩ ±5%	
RME0705	R35	R, Metal 1/4W 365Ω ±1%	
RCR3068	R36	R, Carbon 1/4W 4.7kΩ ±5%	
RME0703	R37	R, Metal 1/4W 475Ω ±0.5%	
RME0830	R38	R, Metal 1/4W 16.0kΩ ±0.5%	
RME0707	R40	R, Metal 1/4W 4.00kΩ ±0.5%	
RCR3012	R41	R, Carbon 1/4W 22Ω ±5%	
RCR3052	R42	R, Carbon 1/4W 1.0kΩ ±5%	
RCR3012	R43	R, Carbon 1/4W 22Ω ±5%	
RCR3004	R44	R, Carbon 1/4W 10Ω ±5%	
RCR3028	R45	R, Carbon 1/4W 100Ω ±5%	
RCR3100	R46	R, Carbon 1/4W 100kΩ ±5%	
RCR3100	R47	R, Carbon 1/4W 100kΩ ±5%	
RCR3036	R49	R, Carbon 1/4W 220Ω ±5%	
RCR3036	R50	R, Carbon 1/4W 220Ω ±5%	
RCR3038	R51	R, Carbon 1/4W 270Ω ±5%	
RCR3052	R52	R, Carbon 1/4W 1.0kΩ ±5%	
RME0708	R53	R, Metal 1/4W 300Ω ±0.5%	
RME0709	R54	R, Metal 1/4W 150Ω ±0.5%	
RME0710	R55	R, Metal 1/4W 90.0Ω ±0.5%	
RME0711	R56	R, Metal 1/4W 60.0Ω ±0.5%	
RCR3032	R57	R, Carbon 1/4W 150Ω ±5%	
RCR3018	R58	R, Carbon 1/4W 39Ω ±5%	
RCR3028	R59	R, Carbon 1/4W 100Ω ±5%	
RCR3032	R61	R, Carbon 1/4W 150Ω ±5%	
RCR3068	R62	R, Carbon 1/4W 4.7kΩ ±5%	
RCR3028	R63	R, Carbon 1/4W 100Ω ±5%	
RCR3062	R64	R, Carbon 1/4W 2.7kΩ ±5%	
RCR3068	R65	R, Carbon 1/4W 4.7kΩ ±5%	
RME0652	R66	R, Metal 1/4W 100Ω ±1%	
RME0671	R68	R, Metal 1/4W 3.92kΩ ±1%	
RCR3056	R69	R, Carbon 1/4W 1.5kΩ ±5%	
RCR3004	R70	R, Carbon 1/4W 10Ω ±5%	
RCR3020	R71	R, Carbon 1/4W 47Ω ±5%	
RCR3012	R72	R, Carbon 1/4W 22Ω ±5%	
RCR3076	R80	R, Carbon 1/4W 10kΩ ±5%	

Part Code	Symbol	Description				Remarks
RCR3012	R81	R, Carbon	1/4W	22Ω	±5%	
RCR3021	R84	R, Carbon	1/4W	51Ω	±5%	
RCR3066	R85	R, Carbon	1/4W	3.9kΩ	±5%	
RCR3066	R86	R, Carbon	1/4W	3.9kΩ	±5%	
RCR3040	R87	R, Carbon	1/4W	330Ω	±5%	
RCR3040	R88	R, Carbon	1/4W	330Ω	±5%	
RMR1067	R89	R, Metal	1/4W	931Ω	±1%	
RMR1067	R90	R, Metal	1/4W	931Ω	±1%	
RCR3044	R91	R, Carbon	1/4W	470Ω	±5%	
RCR3060	R92	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3020	R96	R, Carbon	1/4W	47Ω	±5%	
RCR3080	R97	R, Carbon	1/4W	15kΩ	±5%	
RCR3070	R98	R, Carbon	1/4W	5.6kΩ	±5%	
RCR3012	R103	R, Carbon	1/4W	22Ω	±5%	
RCR3004	R105	R, Carbon	1/4W	10Ω	±5%	
RCR3024	R106	R, Carbon	1/4W	68Ω	±5%	
RME0812	R107	R, Metal	1/2W	900kΩ	±0.5%	
RME0694	R108	R, Metal	1/4W	111kΩ	±1%	
RCR3018	R109	R, Carbon	1/4W	39Ω	±5%	
RCR3026	R110	R, Carbon	1/4W	82Ω	±5%	
RME0813	R112	R, Metal	1/2W	990kΩ	±0.5%	
RME0695	R113	R, Metal	1/4W	10.1kΩ	±0.5%	
RCR3004	R114	R, Carbon	1/4W	10Ω	±5%	
RCR3036	R115	R, Carbon	1/4W	220Ω	±5%	
RCR3020	R116	R, Carbon	1/4W	47Ω	±5%	
RCR3028	R118	R, Carbon	1/4W	100Ω	±5%	
RME0672	R119	R, Metal	1/4W	4.75kΩ	±1%	
RME0828	R120	R, Metal	1/4W	500kΩ	±0.5%	
RME0828	R121	R, Metal	1/4W	500kΩ	±0.5%	
RCR3044	R122	R, Carbon	1/4W	470Ω	±5%	
RSE0434	R123	R, Solid	1/4W	10MΩ	±5%	
RCR3020	R124	R, Carbon	1/4W	47Ω	±5%	
RCR3020	R125	R, Carbon	1/4W	47Ω	±5%	
RCR3092	R126	R, Carbon	1/4W	47kΩ	±5%	
RCR3064	R127	R, Carbon	1/4W	3.3kΩ	±5%	
RCR3060	R128	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3064	R131	R, Carbon	1/4W	3.3kΩ	±5%	
RCR3056	R133	R, Carbon	1/4W	1.5kΩ	±5%	
RME0705	R135	R, Metal	1/4W	365Ω	±1%	
RCR3068	R136	R, Carbon	1/4W	4.7kΩ	±5%	
RME0703	R137	R, Metal	1/4W	475Ω	±0.5%	
RME0830	R138	R, Metal	1/4W	16.0kΩ	±0.5%	
RME0707	R140	R, Metal	1/4W	4.00kΩ	±0.5%	
RCR3012	R141	R, Carbon	1/4W	22Ω	±5%	
RCR3052	R142	R, Carbon	1/4W	1.0kΩ	±5%	
RCR3012	R143	R, Carbon	1/4W	22Ω	±5%	
RCR3004	R144	R, Carbon	1/4W	10Ω	±5%	
RCR3028	R145	R, Carbon	1/4W	100Ω	±5%	
RCR3100	R146	R, Carbon	1/4W	100kΩ	±5%	
RCR3100	R147	R, Carbon	1/4W	100kΩ	±5%	
RCR3036	R149	R, Carbon	1/4W	220Ω	±5%	
RCR3036	R150	R, Carbon	1/4W	220Ω	±5%	
RCR3038	R151	R, Carbon	1/4W	270Ω	±5%	
RCR3052	R152	R, Carbon	1/4W	1.0kΩ	±5%	
RME0708	R153	R, Metal	1/4W	300Ω	±0.5%	
RME0709	R154	R, Metal	1/4W	150Ω	±0.5%	
RME0710	R155	R, Metal	1/4W	90.0Ω	±0.5%	
RME0711	R156	R, Metal	1/4W	60.0Ω	±0.5%	
RCR3032	R157	R, Carbon	1/4W	150Ω	±5%	
RCR3018	R158	R, Carbon	1/4W	39Ω	±5%	
RCR3028	R159	R, Carbon	1/4W	100Ω	±5%	
RCR3032	R161	R, Carbon	1/4W	150Ω	±5%	
RCR3068	R162	R, Carbon	1/4W	4.7kΩ	±5%	
RCR3028	R163	R, Carbon	1/4W	100Ω	±5%	

Part Code	Symbol	Description				Remarks
RCR3064	R164	R, Carbon	1/4W	3.3kΩ	±5%	
RCR3068	R165	R, Carbon	1/4W	4.7kΩ	±5%	
RME0652	R166	R, Metal	1/4W	100Ω	±1%	
RME0671	R168	R, Metal	1/4W	3.92kΩ	±1%	
RCR3056	R169	R, Carbon	1/4W	1.5kΩ	±5%	
RCR3004	R170	R, Carbon	1/4W	10Ω	±5%	
RCR3020	R171	R, Carbon	1/4W	47Ω	±5%	
RCR3012	R172	R, Carbon	1/4W	22Ω	±5%	
RCR3076	R180	R, Carbon	1/4W	10kΩ	±5%	
RCR3012	R181	R, Carbon	1/4W	22Ω	±5%	
RCR3025	R184	R, Carbon	1/4W	75Ω	±5%	
RCR3028	R184B	R, Carbon	1/4W	100Ω	±5%	
RCR3066	R185	R, Carbon	1/4W	3.9kΩ	±5%	
RCR3066	R186	R, Carbon	1/4W	3.9kΩ	±5%	
RCR3040	R187	R, Carbon	1/4W	330Ω	±5%	
RCR3040	R188	R, Carbon	1/4W	330Ω	±5%	
RMR1067	R189	R, Metal	1/4W	931Ω	±1%	
RMR1067	R190	R, Metal	1/4W	931Ω	±1%	
RCR3060	R191	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3060	R192	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3044	R193	R, Carbon	1/4W	470Ω	±5%	
RCR3044	R194	R, Carbon	1/4W	470Ω	±5%	
RCR3020	R196	R, Carbon	1/4W	47Ω	±5%	
RCR3080	R197	R, Carbon	1/4W	15kΩ	±5%	
RCR3070	R198	R, Carbon	1/4W	5.6kΩ	±5%	
RME0676	R1401	R, Metal	1/4W	10.0kΩ	±1%	
RME0676	R1402	R, Metal	1/4W	10.0kΩ	±1%	
RME0676	R1403	R, Metal	1/4W	10.0kΩ	±1%	
RME0676	R1404	R, Metal	1/4W	10.0kΩ	±1%	
RME0676	R1405	R, Metal	1/4W	10.0kΩ	±1%	
RME0676	R1406	R, Metal	1/4W	10.0kΩ	±1%	
RME0676	R1407	R, Metal	1/4W	10.0kΩ	±1%	
RME0676	R1408	R, Metal	1/4W	10.0kΩ	±1%	
RCR3101	R1409	R, Carbon	1/4W	150kΩ	±5%	
RCR3101	R1410	R, Carbon	1/4W	150kΩ	±5%	
3142155B	CV6	C, Variable		ECV-1ZW10X93		
3142155B	CV7	C, Variable		ECV-1ZW10X93		
3142155B	CV11	C, Variable		ECV-1ZW10X93		
3142155B	CV12	C, Variable		ECV-1ZW10X93		
3142155B	CV22	C, Variable		ECV-1ZW10X93		
3142155B	CV106	C, Variable		ECV-1ZW10X93		
3142155B	CV107	C, Variable		ECV-1ZW10X93		
3142155B	CV111	C, Variable		ECV-1ZW10X93		
3142155B	CV112	C, Variable		ECV-1ZW10X93		
3142155B	CV122	C, Variable		ECV-1ZW10X93		
CCC1014	C3	C, Ceramic	50V	47 pF	±5%	
CCC1007	C9	C, Ceramic	50V	22 pF	±5%	
CCD0275	C11	C, Ceramic	500V	5 pF	±0.25pF	
CCD0277	C12	C, Ceramic	500V	10 pF	±0.5pF	
CCC0999	C13	C, Ceramic	50V	5 pF	±0.25pF	
CCC1027	C14	C, Ceramic	50V	220 pF	±10%	
CCC1025	C15	C, Ceramic	50V	100 pF	±10%	
CCC1007	C16	C, Ceramic	50V	22 pF	±5%	
CCC1034	C17	C, Ceramic	50V	68 pF	±5%	
CCC1030	C18	C, Ceramic	50V	10000 pF	+80 -20%	
CCC1030	C19	C, Ceramic	50V	10000 pF	+80 -20%	
CCD0217	C23	C, Ceramic	500V	1000 pF	±10%	
CCC1014	C26	C, Ceramic	50V	47 pF	±5%	
CQA0091	C27	C, Plastic	50V	1000 pF	±10%	
CEC0175	C31	C, AL Elyc	25V	10μF	±20%	

Part Code	Symbol	Description				Remarks
CCC1133	C37	C,Ceramic	50V	1 pF	±0.25pF	
CEC0175	C41	C, AL Elyc	25V	10μF	±20%	
CEC0175	C43	C, AL Elyc	25V	10μF	±20%	
CCC1002	C45	C, Ceramic	50V	10 pF	±0.5pF	
CCC1014	C47	C, Ceramic	50V	47 pF	±5%	
CCC1002	C51	C, Ceramic	50V	10 pF	±0.5pF	
CCC1002	C52	C, Ceramic	50V	10 pF	±0.5pF	
CCC1007	C56	C, Ceramic	50V	22 pF	±5%	
CCC0996	C68	C, Ceramic	50V	2 pF	±0.25pF	
CEC0175	C70	C, AL Elyc	25V	10μF	±20%	
CCC1030	C71	C, Ceramic	50V	10000 pF	+80 -20%	
CEC0175	C72	C, AL Elyc	25V	10μF	±20%	
CCC1027	C87	C, Ceramic	50V	220 pF	±10%	
CCC1027	C88	C, Ceramic	50V	220 pF	±10%	
CCC1029	C92	C, Ceramic	50V	1000 pF	+80 -20%	
CCS0017	C93	Capacitor	50V	0.1μF	+80 -20%	
CQA0101	C96	C, Plastic	50V	47000 pF	±10%	
CCC1014	C103	C, Ceramic	50V	47 pF	±5%	
CCC1007	C109	C, Ceramic	50V	22 pF	±5%	
CCD0275	C111	C, Ceramic	500V	5 pF	±0.25pF	
CCD0277	C112	C, Ceramic	500V	10 pF	±0.5pF	
CCC0999	C113	C, Ceramic	50V	5 pF	±0.25pF	
CCC1027	C114	C, Ceramic	50V	220 pF	±10%	
CCC1025	C115	C, Ceramic	50V	100 pF	±10%	
CCC1007	C116	C, Ceramic	50V	22 pF	±5%	
CCC1034	C117	C, Ceramic	50V	68 pF	±5%	
CCC1030	C118	C, Ceramic	50V	10000 pF	+80 -20%	
CCC1030	C119	C, Ceramic	50V	10000 pF	+80 -20%	
CCD0286	C123	C, Ceramic	500V	1000 pF	+100 -0%	
CCC1014	C126	C, Ceramic	50V	47 pF	±5%	
CQA0091	C127	C, Plastic	50V	1000 pF	±10%	
CEC0175	C131	C, AL Elyc	25V	10μF	±20%	
CCC1133	C137	C, Ceramic	50V	1 pF	±0.25pF	
CEC0175	C141	C, AL Elyc	25V	10μF	±20%	
CEC0175	C143	C, AL Elyc	25V	10μF	±20%	
CCC1002	C145	C, Ceramic	50V	10 pF	±0.5pF	
CCC1014	C147	C, Ceramic	50V	47 pF	±5%	
CCC1002	C151	C, Ceramic	50V	10 pF	±0.5pF	
CCC1002	C152	C, Ceramic	50V	10 pF	±0.5pF	
CCC1007	C156	C, Ceramic	50V	22 pF	±5%	
CCC0996	C168	C, Ceramic	50V	2 pF	±0.25pF	
CEC0175	C170	C, AL Elyc	25V	10μF	±20%	
CCC1030	C171	C, Ceramic	50V	10000 pF	+80 -20%	
CEC0175	C172	C, AL Elyc	25V	10μF	±20%	
CCC1027	C187	C, Ceramic	50V	220 pF	±10%	
CCC1027	C188	C, Ceramic	50V	220 pF	±10%	
CCC1029	C191	C, Ceramic	50V	1000 pF	+80 -20%	
CCC1029	C192	C, Ceramic	50V	1000 pF	+80 -20%	
CQA0101	C196	C, Plastic	50V	47000 pF	±10%	
CEC0161	C201	C, AL Elyc	16V	100μF	±20%	
CES0033	C202	C, AL Elyc	25V	100μF	±20%	
CES0033	C203	C, AL Elyc	25V	100μF	±20%	
CEC0161	C320	C, AL Elyc	16V	100μF	±20%	
CCS0017	C321	Capacitor	50V	0.1μF	+80 -20%	
CCS0017	C1533	Capacitor	50V	0.1μF	+80 -20%	
CCS0017	C1534	Capacitor	50V	0.1μF	+80 -20%	
CCS0017	C1535	Capacitor	50V	0.1μF	+80 -20%	
CCS0017	C1536	Capacitor	50V	0.1μF	+80 -20%	

Part Code	Symbol	Description		Remarks
3142079	SW2	SW, Rotary	S21 Type with RV	
3142079	SW102	SW, Rotary	S21 Type with RV	
SSL0053	SW201	SW, Lever	SLA245	
JBX0468	P1	Connector	171825-3	
JBX0468	P101	Connector	171825-3	
JBX0704	P330	Connector	171825-4	
JBX0704	P406	Connector	171825-4	
JBX0454	P904	Connector	171825-5	
JYX0323	J201	Housing	171822-4	
JYX0323	J202	Housing	171822-4	
JYX0323	J330	Housing	171822-4	
JYX0321	J301	Housing	1-171822-0	
8386020 2	J331	Recp, Assy	171822-6	

③ V AMP UNIT

Part Code	Symbol	Description		Remarks
HTC0148	TR20	Transistor	2SC458-C	
HTC0148	TR21	Transistor	2SC458-C	
HTC0167	TR333	Transistor	2SC535-B	
HTC0167	TR334	Transistor	2SC535-B	
HTC0192	TR335	Transistor	2SC641K-C	
HTC0192	TR336	Transistor	2SC641K-C	
HTD0116	TR337	Transistor	2SB718C	
HTD0116	TR338	Transistor	2SB718C	
HTB0108	TR339	Transistor	2SB718C	
HTB0108	TR340	Transistor	2SB718C	
HTA0099	TR341	Transistor	2SA781K	
HTA0099	TR342	Transistor	2SA781K	
HDH0029	D332	Diode	HZ5B	
HDH0029	D333	Diode	HZ5B	
HDH0029	D334	Diode	HZ5B	
RNE0025	RV353	VR, Metal	EVN-32C A00 B22(200Ω)	
8348450J	RV1033	VR, Metal	CR29R 47kΩ	
8348450L	RV1035	VR, Metal	CR29R 220kΩ	
3142155C	CV316	C, Variable	ECV-1ZW20X93	
3142155	CV359	C, Variable	ECV-1ZW40X93	
RCR3040	R301	R, Carbon	1/4W 330Ω ±5%	
RCR3044	R302	R, Carbon	1/4W 470Ω ±5%	
RCR3064	R303	R, Carbon	1/4W 3.3kΩ ±5%	
RCR3064	R304	R, Carbon	1/4W 3.3kΩ ±5%	
RCR3060	R305	R, Carbon	1/4W 2.2kΩ ±5%	
RCR3060	R306	R, Carbon	1/4W 2.2kΩ ±5%	
RCR3040	R307	R, Carbon	1/4W 330Ω ±5%	
RCR3044	R308	R, Carbon	1/4W 470Ω ±5%	
RCR3056	R311	R, Carbon	1/4W 1.5kΩ ±5%	

④ TRIG UNIT

Part Code	Symbol	Description				Remarks
RCR3056	R312	R, Carbon	1/4W	1.5kΩ	±5%	
RCR3027	R313	R, Carbon	1/4W	91Ω	±5%	
RCR3027	R314	R, Carbon	1/4W	91Ω	±5%	
RCR3153	R315	R, Carbon	1/2W	560Ω	±5%	
RCR3052	R316	R, Carbon	1/4W	1.0kΩ	±5%	
RME0652	R331	R, Metal	1/4W	100Ω	±1%	
RME0652	R332	R, Metal	1/4W	100Ω	±1%	
RCR3030	R353A	R, Carbon	1/4W	120Ω	±5%	
RCR3034	R353B	R, Carbon	1/4W	180Ω	±5%	
RCR3076	R354	R, Carbon	1/4W	10kΩ	±5%	
RME0816	R355	R, Metal	1/4W	1.27kΩ	±1%	
RME0816	R356	R, Metal	1/4W	1.27kΩ	±1%	
RME0662	R357	R, Metal	1/4W	681Ω	±1%	
RME0662	R358	R, Metal	1/4W	681Ω	±1%	
RME0662	R359	R, Metal	1/4W	681Ω	±1%	
RME0662	R360	R, Metal	1/4W	681Ω	±1%	
RMR2782	R362	R, Metal	1W	10kΩ	±5%	
RMR2782	R363	R, Metal	1W	10kΩ	±5%	
RCR3012	R364	R, Carbon	1/4W	22Ω	±5%	
RCR3012	R365	R, Carbon	1/4W	22Ω	±5%	
RCR3042	R366	R, Carbon	1/4W	390Ω	±5%	
RCR3042	R367	R, Carbon	1/4W	390Ω	±5%	
RMR2785	R368	R, Metal	1W	33kΩ	±5%	
RMR2782	R369	R, Metal	1W	10kΩ	±5%	
RMR2782	R370	R, Metal	1W	10kΩ	±5%	
RCR3012	R371	R, Carbon	1/4W	22Ω	±5%	
RCR3012	R372	R, Carbon	1/4W	22Ω	±5%	
RCR3060	R373	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3060	R374	R, Carbon	1/4W	2.2kΩ	±5%	
RME0709	R375	R, Metal	1/4W	150Ω	±0.5%	
RME0709	R376	R, Metal	1/4W	150Ω	±0.5%	
RCR3020	R377	R, Carbon	1/4W	47Ω	±5%	
RCR3020	R378	R, Carbon	1/4W	47Ω	±5%	
RCR3020	R379	R, Carbon	1/4W	47Ω	±5%	
RCR3020	R380	R, Carbon	1/4W	47Ω	±5%	
RCR3036	R1032	R, Carbon	1/4W	220Ω	±5%	
RCR3086	R1033	R, Carbon	1/4W	27kΩ	±5%	
RCR3096	R1034	R, Carbon	1/4W	68kΩ	±5%	
CEC0175	C331	C, AL Elyc	25V	10μF	±20%	
CEC0175	C337	C, AL Elyc	25V	10μF	±20%	
CQA0095	C354	C, Plastic	50V	4700pF	±10%	
CEC0175	C356	C, AL Elyc	25V	10μF	±20%	
CEC0175	C357	C, AL Elyc	25V	10μF	±20%	
CCC1030	C358	C, Ceramic	50V	10000pF	+80% −20%	
CCC1011	C360	C, Ceramic	50V	33pF	±5%	
CCC1138	C362	C, Ceramic	500V	2pF	±0.5pF	
CCC1138	C363	C, Ceramic	500V	2pF	±0.5pF	
CCD0218	C368	C, Ceramic	500V	10000pF	±10%	
CCD0218	C373	C, Ceramic	500V	10000pF	±10%	
CCD0218	C374	C, Ceramic	500V	10000pF	±10%	
CCD0218	C375	C, Ceramic	500V	10000pF	±10%	
CCD0218	C376	C, Ceramic	500V	10000pF	±10%	
CCD0218	C1034	C, Ceramic	500V	10000pF	±10%	
CCC1030	C1035	C, Ceramic	50V	10000pF	+80% −20%	
TLF0058	L366	Coil	FL3H	2.2μH	±20%	
TLF0058	L367	Coil	FL3H	2.2μH	±20%	
JYX0323	P330	Housing	171822-4			
JBX0470	P331	Connector	171825-6			

Part Code	Symbol	Description				Remarks
IDH0467	IC402	Digital IC	HD74LS00P			
IDH0471	IC403	Digital IC	HD74LS04P			
HTK0081	TR401	Transistor	2SK304E			
HTC0148	TR402	Transistor	2SC458-C-			
HTC0148	TR404	Transistor	2SC458-C-			
HTC0148	TR405	Transistor	2SC458-C-			
HDS0108	D401	Diode	1S2075			
RCR3068	R401	R, Carbon	1/4W	4.7kΩ	±5%	
RCR3084	R402	R, Carbon	1/4W	22kΩ	±5%	
RCR3104	R403	R, Carbon	1/4W	470kΩ	±5%	
RCR3104	R405	R, Carbon	1/4W	470kΩ	±5%	
RCR3076	R406	R, Carbon	1/4W	10kΩ	±5%	
RCR3052	R407	R, Carbon	1/4W	1.0kΩ	±5%	
RCR3060	R408	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3020	R411	R, Carbon	1/4W	47Ω	±5%	
RCR3036	R412	R, Carbon	1/4W	220Ω	±5%	
RCR3028	R413	R, Carbon	1/4W	100Ω	±5%	
RCR3052	R414	R, Carbon	1/4W	1.0kΩ	±5%	
RCR3058	R421	R, Carbon	1/4W	1.8kΩ	±5%	
RCR3064	R422	R, Carbon	1/4W	3.3kΩ	±5%	
RCR3058	R423	R, Carbon	1/4W	1.8kΩ	±5%	
RCR3026	R424	R, Carbon	1/4W	82Ω	±5%	
RCR3064	R425	R, Carbon	1/4W	3.3kΩ	±5%	
RCR3064	R426	R, Carbon	1/4W	3.3kΩ	±5%	
RCR3076	R430	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R431	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R432	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R433	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R434	R, Carbon	1/4W	10kΩ	±5%	
RCR3104	R437	R, Carbon	1/4W	470kΩ	±5%	
RCR3052	R440	R, Carbon	1/4W	1.0kΩ	±5%	
RCR3052	R441	R, Carbon	1/4W	1.0kΩ	±5%	
RCR3052	R450	R, Carbon	1/4W	1.0kΩ	±5%	
RCR3068	R452	R, Carbon	1/4W	4.7kΩ	±5%	
RCR3068	R453	R, Carbon	1/4W	4.7kΩ	±5%	
RDE0003	RV401	VR, Carbon	EVH-YK3325B14			
RNE0029	RV402	VR, Metal	EVN-32C A00 B53(5kΩ)			
CCC1030	C400	C, Ceramic	50V	10000pF	+80% −20%	
CCC1029	C402	C, Ceramic	50V	1000pF	+80% −20%	
CCD0279	C403	C, Ceramic	500V	22pF	±5%	
CES0032	C405	C, AL Elyc	25V	47μF	±20%	
CES0032	C406	C, AL Elyc	25V	47μF	±20%	
CCC1030	C407	C, Ceramic	50V	10000pF	+80% −20%	
CCD0279	C413	C, Ceramic	500V	22pF	±5%	
CEC0176	C414	C, AL Elyc	25V	10μF	NP±20%	
CQA0103	C437	C, Plastic	50V	0.1μF	±10%	
CCC1356	C450	C, Ceramic	50V	470pF	+80% −20%	
CES0032	C461	C, AL Elyc	25V	47μF	±20%	
CES0032	C462	C, AL Elyc	25V	47μF	±20%	
CES0032	C463	C, AL Elyc	25V	47μF	±20%	
CCS0017	C464	Capacitor	50V	0.1μF	+80% −20%	
CCS0017	C465	Capacitor	50V	0.1μF	+80% −20%	
CCS0017	C466	Capacitor	50V	0.1μF	+80% −20%	
CCS0017	C468	Capacitor	50V	0.1μF	+80% −20%	
CCS0017	C469	Capacitor	50V	0.1μF	+80% −20%	

Part Code	Symbol	Description	Remarks
CEC0160	C470	C, AL Elyc 16V 10μF ±20%	
SSL0054	SW401	SW, Lever SLA224 Non Short	
8311793C	SW402	SW, PB UEG22-2 Lock	
SSL0054	SW403	SW, Lever SLA224 Non Short	
8386020	J405	Recp, Assy 171822-6	
JYX0323	J406	Housing 171822-4	
JYX0321	J407	Housing 1-171822-0	
8386020	J906	Recp, Assy 171822-6	

⑤ SWEEP UNIT

Part Code	Symbol	Description	Remarks
IDH0646	IC251	Digital IC HD74LS02P	
IDH0179	IC252	IC HD2511P	
IDH0586	IC501	IC HD74LS74AP	
IDH0820	IC502	IC, Digital HD74LS123P	
IDH0802	IC503	IC, Digital HD14053BP	
IDH0666	IC504	IC HD74LS08P	
IDH0666	IC506	IC HD74LS08P	
IDH0475	IC507	IC HD74LS10P	
IDH0475	IC508	IC HD74LS10P	
IDH0479	IC509	IC HD74LS20P	
HTK0081	TR501	Transistor 2SK304E	
HTC0148	TR502	Transistor 2SC458-C-	
HTC0148	TR503	Transistor 2SC458-C-	
HTA0224	TR828	Transistor 2SA1029 D	
HTA0224	TR829	Transistor 2SA1029 D	
HTA0224	TR846	Transistor 2SA1029 D	
HTA0224	TR847	Transistor 2SA1029 D	
HTC0085	TR856	Transistor 2SC1514	
HTC0085	TR857	Transistor 2SC1514	
HTC0148	TR901	Transistor 2SC458-C	
HTC0148	TR1301	Transistor 2SC458-C	
HDS0108	D251	Diode 1S2075	
HDS0108	D252	Diode 1S2075	
HDS0108	D501	Diode 1S2075	
HDS0108	D503	Diode 1S2075	
HDS0108	D504	Diode 1S2075	
HDS0108	D505	Diode 1S2075	
HDS0108	D506	Diode 1S2075	
HDS0108	D507	Diode 1S2075	
HDS0108	D901	Diode 1S2075	
HDS0108	D902	Diode 1S2075	
HDS0108	D903	Diode 1S2075	
HDS0108	D905	Diode 1S2075	
HDS0108	D906	Diode 1S2075	
HDT0013	D1305	Diode TLR103K	

Part Code	Symbol	Description	Remarks
RDE0003	RV815	VR, Carbon EVH-YK3325B14	
8348450D	RV830	VR, Metal CR29R 1kΩ	
8348450B	RV831	VR, Metal CR29R 220Ω	
RCR3038	R251	R, Carbon 1/4W 270Ω ±5%	
RCR3060	R252	R, Carbon 1/4W 2.2kΩ ±5%	
RCR3048	R256	R, Carbon 1/4W 680Ω ±5%	
RCR3086	R257	R, Carbon 1/4W 27kΩ ±5%	
RCR3056	R258	R, Carbon 1/4W 1.5kΩ ±5%	
RCR3052	R261	R, Carbon 1/4W 1.0kΩ ±5%	
RCR3086	R262	R, Carbon 1/4W 27kΩ ±5%	
RCR3088	R428	R, Carbon 1/4W 33kΩ ±5%	
RCR3052	R501	R, Carbon 1/4W 1.0kΩ ±5%	
RCR3044	R502	R, Carbon 1/4W 470Ω ±5%	
RCR3056	R503	R, Carbon 1/4W 1.5kΩ ±5%	
RCR3078	R504	R, Carbon 1/4W 12kΩ ±5%	
RCR3050	R505	R, Carbon 1/4W 820Ω ±5%	
RCR3076	R506	R, Carbon 1/4W 10kΩ ±5%	
RMR3282	R511	R, Metal 1/2W 1.43MΩ ±1%	
RMR2262	R512	R, Metal 1/2W 715kΩ ±0.5%	
RME0699	R513	R, Metal 1/4W 429kΩ ±0.5%	
RME0718	R514	R, Metal 1/4W 143kΩ ±0.5%	
RME0717	R515	R, Metal 1/4W 71.5kΩ ±0.5%	
RME0717	R516	R, Metal 1/4W 71.5kΩ ±0.5%	
RCR3050	R518	R, Carbon 1/4W 820Ω ±5%	
RCR3028	R519	R, Carbon 1/4W 100Ω ±5%	
RMR2789	R521	R, Metal 2W 22Ω ±5%	
RCR3078	R522	R, Carbon 1/4W 12kΩ ±5%	
RCR3080	R523	R, Carbon 1/4W 15kΩ ±5%	
RCR3080	R524	R, Carbon 1/4W 15kΩ ±5%	
RCR3084	R525	R, Carbon 1/4W 22kΩ ±5%	
RCR3068	R801	R, Carbon 1/4W 4.7kΩ ±5%	
RCR3052	R803	R, Carbon 1/4W 1.0kΩ ±5%	
RCR3056	R809	R, Carbon 1/4W 1.5kΩ ±5%	
RCR3076	R813	R, Carbon 1/4W 10kΩ ±5%	
RCR3056	R814	R, Carbon 1/4W 1.5kΩ ±5%	
RCR3076	R815	R, Carbon 1/4W 10kΩ ±5%	
RME0731	R828	R, Metal 1/4W 158kΩ ±1%	
RME0731	R829	R, Metal 1/4W 158kΩ ±1%	
RCR3056	R830	R, Carbon 1/4W 1.5kΩ ±5%	
RCR3020	R831	R, Carbon 1/4W 47Ω ±5%	
RCR3044	R832	R, Carbon 1/4W 470Ω ±5%	
RME0729	R842	R, Metal 1/4W 6.19kΩ ±1%	
RME0729	R843	R, Metal 1/4W 6.19kΩ ±1%	
RCR3207	R844	R, Carbon 1/2W 100kΩ ±5%	
RCR3207	R845	R, Carbon 1/2W 100kΩ ±5%	
RCR3064	R846	R, Carbon 1/4W 3.3kΩ ±5%	
RCR3064	R847	R, Carbon 1/4W 3.3kΩ ±5%	
RMR2853	R854	R, Metal 5W 22kΩ ±5%	
RMR2853	R855	R, Metal 5W 22kΩ ±5%	
RCR3038	R856	R, Carbon 1/4W 270Ω ±5%	
RCR3038	R857	R, Carbon 1/4W 270Ω ±5%	
RCR3004	R859	R, Carbon 1/4W 10Ω ±5%	
RCR3060	R860	R, Carbon 1/4W 2.2kΩ ±5%	
RCR3092	R901	R, Carbon 1/4W 47kΩ ±5%	
RCR3076	R902	R, Carbon 1/4W 10kΩ ±5%	
RCR3076	R903	R, Carbon 1/4W 10kΩ ±5%	
RCR3028	R1301	R, Carbon 1/4W 100Ω ±5%	
RCR3052	R1302	R, Carbon 1/4W 1.0kΩ ±5%	
RCR3076	R1304	R, Carbon 1/4W 10kΩ ±5%	
RCR3076	R1308	R, Carbon 1/4W 10kΩ ±5%	
RCR3076	R1309	R, Carbon 1/4W 10kΩ ±5%	
RCR3076	R1310	R, Carbon 1/4W 10kΩ ±5%	

Part Code	Symbol	Description			Remarks
RCR3076	R1311	R, Carbon	1/4W	10kΩ ±5%	
RCR3068	R1313	R, Carbon	1/4W	4.7kΩ ±5%	
RCR3068	R1314	R, Carbon	1/4W	4.7kΩ ±5%	
CCC1027	C251	C, Ceramic	50V	220pF +10%	
CQA0091	C252	C, Plastic	50V	1000pF ±10%	
CCC1027	C256	C, Ceramic	50V	220pF ±10%	
CCC1162	C261	C, Ceramic	50V	470pF ±10%	
CEC0175	C427	C, AL Elyc	25V	10μF +20%	
CEC0175	C502	C, AL Elyc	25V	10μF +20%	
CCS0017	C503A	Capacitor	50V	0.1μF +80 -20%	
CEC0175	C503B	C, AL Elyc	25V	10μF +20%	
CCC1011	C505	C, Ceramic	50V	33pF ±5%	
CCC1032	C510	C, Ceramic	50V	82pF ±5%	
3142077A	C511,512	C, Plastic	100V	0.01μF ±1%	
CCC1007	C513	C, Ceramic	50V	22pF +5%	
CQA0091	C524	C, Plastic	50V	1000pF +10%	
CEC0175	C525	C, AL Elyc	25V	10μF	
CQA0103	C526	C, Plastic	50V	0.1μF +10%	
CES0033	C530	C, AL Elyc	25V	100μF +20%	
CES0033	C531	C, AL Elyc	25V	100μF +20%	
CES0033	C532	C, AL Elyc	25V	100μF +20%	
CCS0017	C533	Capacitor	50V	0.1μF +80 -20%	
CCS0017	C534	Capacitor	50V	0.1μF +80 -20%	
CCS0017	C535	Capacitor	50V	0.1μF +80 -20%	
CCS0017	C536	Capacitor	50V	0.1μF +80 -20%	
CCS0017	C537	Capacitor	50V	0.1μF +80 -20%	
CCS0017	C538	Capacitor	50V	0.1μF +80 -20%	
CCS0017	C539	Capacitor	50V	0.1μF +80 -20%	
CCS0017	C540	Capacitor	50V	0.1μF +80 -20%	
CCC1011	C801	C, Ceramic	50V	33pF ±5%	
CCC0591	C828	C, Ceramic	500V	10000pF ±20%	
CCC1029	C832	C, Ceramic	50V	1000pF +80 -20%	
CCD0272	C844	C, Ceramic	500V	1pF ±0.25pF	
CCD0272	C845	C, Ceramic	500V	1pF ±0.25pF	
CCD0218	C854	C, Ceramic	500V	10000pF ±10%	
CCD0218	C855	C, Ceramic	500V	10000pF ±10%	
CCC1014	C860	C, Ceramic	50V	47pF ±5%	
CCC1030	C903	C, Ceramic	50V	10000pF +80 -20%	
CCC1029	C905	C, Ceramic	50V	1000pF ±20%	
CCC1030	C1034	C, Ceramic	50V	10000pF +80 -20%	
CCC1030	C1034	C, Ceramic	50V	10000pF +80 -20%	
3142155E	CV510	C, Variable	ECV-1ZW40X93		
TLF0004	L261	Coil	FL7H	100μH ±10%	
TLF0148	L854	Coil	FL-7H	6.8MH ±5%	
8408168	SW501	SW, Rotary	S21P4YA		
8311793C	SW502	SW, PB	UEG22-2 Lock		
8408169	SW503	SW, Lever	SLR823		
JBX0477	P251	Connector	3399-6026 (26P)		
JBX0470	P405	Connector	171825-6		
JBX0468	P801	Connector	171825-3		
JBX0452	P902	Connector	1-171825-2		
JBX0467	P903	Connector	171825-8		
JBX0470	P906	Connector	171825-6		

⑥ VR UNIT

Part Code	Symbol	Description			Remarks
HTC0032	TR1161	Transistor	2SC1061-C-		
HTC0148	TR1162	Transistor	2SC458-C-		
HTC0148	TR1201	Transistor	2SC458-C-		
HDT0013	D1113	Diode	TLR103K		
HDH0040	D1301	Diode	HZ7B		
HDH0040	D1302	Diode	HZ7B		
HDS0108	D1303	Diode	1S2075		
HDS0108	D1304	Diode	1S2075		
8348451	RV1026	VR, Carbon	EVH-CCAS15B14	10kΩ	
8348452	RV1101	VR, Carbon	EVH-CCAK20B14	10kΩ	
8348450	RV1203	VR, Metal	CR29R	4.7kΩ	
RCR3052	R1111	R, Carbon	1/4W	1.0kΩ ±5%	
RCR3052	R1162	R, Carbon	1/4W	1.0kΩ ±5%	
RCR3076	R1200	R, Carbon	1/4W	10kΩ ±5%	
RCR3070	R1201	R, Carbon	1/4W	5.6kΩ ±5%	
RCR3076	R1202	R, Carbon	1/4W	10kΩ ±5%	
RCR3080	R1203	R, Carbon	1/4W	15kΩ ±5%	
RCR3054	R1204	R, Carbon	1/4W	1.2kΩ ±5%	
RCR3068	R1303	R, Carbon	1/4W	4.7kΩ ±5%	
CCC1029	C1203	C, Ceramic	50V	1000pF +80 -20%	
CCC1029	C1204	C, Ceramic	50V	1000pF +80 -20%	
CCS0017	C1301	Capacitor	50V	0.1μF +80 -20%	
CCS0017	C1302	Capacitor	50V	0.1μF +80 -20%	
CEC0175	C1303	C, AL Elyc	25V	10μF	
CEC0175	C1304	C, AL Elyc	25V	10μF	
JYX0325	J903	Housing	171822-8		
JBX0468	P1001	Connector	171825-3		
JBX0468	P1161	Connector	171825-3		
JBX0468	P1162	Connector	171825-3		

⑦ AD UNIT, ⑧ ⑨ CONT UNIT

Part Code	Symbol	Description		Remarks
ILH0123	IC1	IC, Analog	HA17408P	
ILH0123	A5	IC, Analog	HA17408P	
ILH0123	B5	IC, Analog	HA17408P	
IDT0063	A2	IC, Digital	TDC1001J	
IDT0063	B2	IC, Digital	TDC1001J	
ILH0091	IC2	IC	HA17458PS	
ILH0091	IC3	IC	HA17458PS	
ILH0091	IC4	IC	HA17458PS	
ILH0091	IC5	IC	HA17458PS	
ILH0091	IC8	IC	HA17458PS	
ILH0091	IC9	IC	HA17458PS	

Part Code	Symbol	Description	Remarks
IDH0802	IC6	IC, Digital HD14053BP	
IDH0802	IC7	IC, Digital HD14053BP	
IDS0282	A3	IC SN74LS374N	
IDS0282	B3	IC SN74LS374N	
IDS0257	A4	IC SN74LS273N	
IDS0257	B4	IC SN74LS273N	
IDH0764	A5	IC HD74LS244P	
IDH0764	B6	IC HD74LS244P	
IDH0799	A8	IC, Digital HD14049UBP	
IDH0588	A9	IC HD14011BG	
IDH0581	B8	IC HD74LS175P	
IDS0280	E7	IC SN74LS390N	
IDS0280	E8	IC SN74LS390N	
IDS0280	E9	IC SN74LS390N	
IDH0586	C9	IC HD74LS74AP	
IDH0586	C13	IC HD74LS74AP	
IDH0586	D9	IC HD74LS74AP	
IDH0586	D10	IC HD74LS74AP	
IDH0586	D11	IC HD74LS74AP	
IDH0586	E2	IC HD74LS74AP	
IDH0586	E4	IC HD74LS74AP	
IDH0586	F6	IC HD74LS74AP	
IDH0586	F8	IC HD74LS74AP	
IDH0586	F11	IC HD74LS74AP	
IDH0586	G8	IC HD74LS74AP	
IDH0624	A10	IC HD74LS193P	
IDH0624	A11	IC HD74LS193P	
IDH0624	A12	IC HD74LS193P	
IDH0624	G9	IC HD74LS193P	
IDH0624	G10	IC HD74LS193P	
IDH0624	G11	IC HD74LS193P	
IDH0698	C8	IC HD74LS54	
IDH0698	D7	IC HD74LS54	
IDH0766	B12	IC HD74LS221P	
IDH0766	C11	IC HD74LS221P	
IDH0487	E10	IC HD74LS51P	
IDH0765	F1	IC HD74LS192P	
IDH0765	F2	IC HD74LS192P	
IDH0765	F3	IC HD74LS192P	
IDH0767	G5	IC HD74LS160P	
IDH0582	G4	IC HD74LS107P	
IDH0582	F9	IC HD74LS107P	
IDH0629	E6	IC HD74LS153P	
IDH0467	B10	IC HD74LS00P	
IDH0467	D8	IC HD74LS00P	
IDH0467	D13	IC HD74LS00P	
IDH0467	E5	IC HD74LS00P	
IDH0467	F4	IC HD74LS00P	
IDH0467	F5	IC HD74LS00P	
IDH0467	F10	IC HD74LS00P	
IDH0467	E12	IC HD74LS00P	
IDH0467	G3	IC HD74LS00P	
IDH0467	G6	IC HD74LS00P	
IDH0768	C7	IC HD74LS27P	
IDH0475	F7	IC HD74LS10P	
IDH0475	G2	IC HD74LS10P	
IDH0471	E1	IC HD74LS04P	
IDH0471	E11	IC HD74LS04P	
IDH0666	B9	IC HD74LS08P	
IDH0666	D12	IC HD74LS08P	
IDH0666	E3	IC HD74LS08P	
IDH0666	F12	IC HD74LS08P	
IDH0747	C3	IC HM4334P-4	

Part Code	Symbol	Description	Remarks
IDH0747	C4	IC HM4334P-4	
IDH0747	D3	IC HM4334P-4	
IDH0747	D4	IC HM4334P-4	
IDH0663	C1	IC HD74LS163P	
IDH0663	C2	IC HD74LS163P	
IDH0663	C5	IC HD74LS163P	
IDH0663	D1	IC HD74LS163P	
IDH0663	D2	IC HD74LS163P	
IDH0663	D5	IC HD74LS163P	
IDH0467	G12	IC HD74LS00P	
HDS0108	D5	Diode 1S2075	
HDH0029	D6	Diode HZ5B (4.6V - 5.0V)	
HDS0108	D220	Diode 1S2075	
HDS0108	D221	Diode 1S2075	
HDS0108	D222	Diode 1S2075	
HDS0108	D223	Diode 1S2075	
HDS0108	D224	Diode 1S2075	
HDS0108	D225	Diode 1S2075	
HTC0167	TR30	Transistor 2SC535-B-	
HTC0167	TR31	Transistor 2SC535-B-	
HTA0105	TR32	Transistor 2SA836D	
HTA0105	TR33	Transistor 2SA836D	
HTC0148	TR34	Transistor 2SC458-C-	
RCR3060	R1417	R, Carbon 1/4W 2.2kΩ ±5%	
RCR3060	R1418	R, Carbon 1/4W 2.2kΩ ±5%	
RCR3102	R1419	R, Carbon 1/4W 220kΩ ±5%	
RCR3074	R1420	R, Carbon 1/4W 8.2kΩ ±5%	
RCR3092	R1421	R, Carbon 1/4W 47kΩ ±5%	
RCR3076	R1422	R, Carbon 1/4W 10kΩ ±5%	
RCR3028	R1423	R, Carbon 1/4W 100Ω ±5%	
RCR3100	R1424	R, Carbon 1/4W 100kΩ ±5%	
RCR3052	R1425	R, Carbon 1/4W 1kΩ ±5%	
RCR3040	R1426	R, Carbon 1/4W 330Ω ±5%	
RME0729	R1427	R, Metal 1/4W 6.19kΩ ±1%	
RME0729	R1428	R, Metal 1/4W 6.19kΩ ±1%	
RCR3092	R1429	R, Carbon 1/4W 47kΩ ±5%	
RME0673	R1430	R, Metal 1/4W 5.62kΩ ±1%	
RMR0979	R1431	R, Metal	
RCR3052	R1432	R, Carbon 1/4W 1kΩ ±5%	
RME0681	R1433	R, Metal 1/4W 26.7kΩ ±1%	
RME0808	R1434	R, Metal 1/4W 53.6kΩ ±1%	
RME0664	R1435	R, Metal 1/4W 1.00kΩ ±1%	
RME0664	R1436	R, Metal 1/4W 1.00kΩ ±1%	
RME0688	R1437	R, Metal 1/4W 100kΩ ±1%	
RME0688	R1438	R, Metal 1/4W 100kΩ ±1%	
RMR0979	R1439	R, Metal	
RME0672	R1440	R, Metal 1/4W 4.75kΩ ±1%	
RCR3066	R1441	R, Carbon 1/4W 3.9kΩ ±5%	
RCR3060	R1442	R, Carbon 1/4W 2.2kΩ ±5%	
RCR3052	R1443	R, Carbon 1/4W 1kΩ ±5%	
RCR3092	R1444	R, Carbon 1/4W 47kΩ ±5%	
RCR3080	R1445	R, Carbon 1/4W 15kΩ ±5%	
RCR3040	R1446	R, Carbon 1/4W 330Ω ±5%	
RCR3044	R1447	R, Carbon 1/4W 470Ω ±5%	
RCR3076	R1448	R, Carbon 1/4W 10kΩ ±5%	
RCR3040	R1449	R, Carbon 1/4W 330Ω ±5%	
RCR3076	R1450	R, Carbon 1/4W 10kΩ ±5%	
RCR3076	R1451	R, Carbon 1/4W 10kΩ ±5%	
RCR3076	R1452	R, Carbon 1/4W 10kΩ ±5%	
RCR3076	R1453	R, Carbon 1/4W 10kΩ ±5%	

Part Code	Symbol	Description				Remarks
RCR3036	R1454	R, Carbon	1/4W	220Ω	±5%	
RCR3076	R1455	R, Carbon	1/4W	10kΩ	±5%	
RCR3040	R1456	R, Carbon	1/4W	330Ω	±5%	
RME0666	R1549	R, Metal	1/4W	1.50kΩ	±1%	
RME0729	R1550	R, Metal	1/4W	6.19kΩ	±1%	
RME0729	R1551	R, Metal	1/4W	6.19kΩ	±1%	
RCR3076	R1552	R, Carbon	1/4W	10kΩ	±5%	
RCR3088	R1553	R, Carbon	1/4W	33kΩ	±5%	
RCR3076	R1554	R, Carbon	1/4W	10kΩ	±5%	
RCR3040	R1555	R, Carbon	1/4W	330Ω	±5%	
RCR3060	R1556	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3052	R1557	R, Carbon	1/4W	1kΩ	±5%	
RCR3052	R1558	R, Carbon	1/4W	1kΩ	±5%	
RCR3040	R1559	R, Carbon	1/4W	330Ω	±5%	
RCR3046	R1560	R, Carbon	1/4W	560Ω	±5%	
RCR3040	R1561	R, Carbon	1/4W	330Ω	±5%	
RCR3016	R1562	R, Carbon	1/4W	33Ω	±5%	
RCR3060	R1563	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3044	R1564	R, Carbon	1/4W	470Ω	±5%	
RCR3076	R1565	R, Carbon	1/4W	10kΩ	±5%	
RMR1067	R1566	R, Metal	1/4W	931Ω	±1%	
RMR1067	R1567	R, Metal	1/4W	931Ω	±1%	
RCR3066	R1568	R, Carbon	1/4W	3.9kΩ	±5%	
RCR3062	R1569	R, Carbon	1/4W	2.7kΩ	±5%	
RME0729	R1570	R, Metal	1/4W	6.19kΩ	±1%	
RME0729	R1571	R, Metal	1/4W	6.19kΩ	±1%	
RME0666	R1572	R, Metal	1/4W	1.50kΩ	±1%	
RCR3060	R1573	R, Carbon	1/4W	2.2kΩ	±5%	
RCR3076	R1574	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R1575	R, Carbon	1/4W	10kΩ	±5%	
RCR3040	R1576	R, Carbon	1/4W	330Ω	±5%	
RCR3097	R1577	R, Carbon	1/4W	75kΩ	±5%	
RCR3097	R1578	R, Carbon	1/4W	75kΩ	±5%	
RCR3076	R1579	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R1580	R, Carbon	1/4W	10kΩ	±5%	
RCR3084	R1581	R, Carbon	1/4W	22kΩ	±5%	
RCR3084	R1582	R, Carbon	1/4W	22kΩ	±5%	
RCR3028	R1583	R, Carbon	1/4W	100Ω	±5%	
RCR3028	R1584	R, Carbon	1/4W	100Ω	±5%	
RCR3028	R1585	R, Carbon	1/4W	100Ω	±5%	
RCR3076	R1586	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R1587	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R1588	R, Carbon	1/4W	10kΩ	±5%	
RCR3050	R1589	R, Carbon	1/4W	820Ω	±5%	
RCR3098	R1590	R, Carbon	1/4W	82kΩ	±5%	
RCR3073	R1591	R, Carbon	1/4W	7.5kΩ	±5%	
RCR3068	R1592	R, Carbon	1/4W	4.7kΩ	±5%	
RCR3076	R1593	R, Carbon	1/4W	10kΩ	±5%	
RCR3071	R1594	R, Carbon	1/4W	6.2kΩ	±5%	
RCR3082	R1595	R, Carbon	1/4W	18kΩ	±5%	
RCR3076	R1596	R, Carbon	1/4W	10kΩ	±5%	
RCR3076	R1597	R, Carbon	1/4W	10kΩ	±5%	
RCR3052	R1598	R, Carbon	1/4W	1.0kΩ	±5%	
RCR3076	R1599	R, Carbon	1/4W	10kΩ	±5%	
RCR3069	R1650	R, Carbon	1/4W	5.1kΩ	±5%	
RCR3069	R1651	R, Carbon	1/4W	5.1kΩ	±5%	
RCR3034	R1652	R, Carbon	1/4W	180Ω	±5%	
RCR3034	R1653	R, Carbon	1/4W	180Ω	±5%	
RCR3028	R1654	R, Carbon	1/4W	100Ω	±5%	
RCR3028	R1655	R, Carbon	1/4W	100Ω	±5%	
RNT0191	RV1429	RV, Metal	EVN-38C A00 B14 10kΩ			
RNT0188	RV1430	RV, Metal	EVN-38C A00 B13 1kΩ			

Part Code	Symbol	Description				Remarks
RNT0188	RV1440	RV, Metal	EVN-38C A00 B13 1kΩ			
RNT0191	RV1553	RV, Metal	EVN-38C A00 B14 10kΩ			
RNT0187	RV1556	RV, Metal	EVN-38C A00 B52 500Ω			
RNT0187	RV1573	RV, Metal	EVN-38C A00 B52 500Ω			
RNT0191	RV1574	RV, Metal	EVN-38C A00 B14 10kΩ			
RNT0192	RV1577	RV, Metal	EVN-38C A00 B24 20kΩ			
RNT0192	RV1578	RV, Metal	EVN-38C A00 B24 20kΩ			
RNT0191	RV1581	RV, Metal	EVN-38C A00 B14 10kΩ			
RNT0191	RV1582	RV, Metal	EVN-38C A00 B14 10kΩ			
RNT0193	RV1590	RV, Metal	EVN-38C A00 B54 50kΩ			
RNT0191	RV1595	RV, Metal	EVN-38C A00 B14 10kΩ			
RNT0185	RV1652	RV, Metal	EVN-38C A00 B12 100Ω			
RNT0185	RV1653	RV, Metal	EVN-38C A00 B12 100Ω			
CCC0752	C1417	C, Ceramic	50V	220pF	±5%	
CCC0752	C1418	C, Ceramic	50V	220pF	±5%	
CCS0017	C1419	Capacitor	50V	0.1μF	+80 −20%	
CES0033	C1420	C, AL Elyc	25V	100μF	±20%	
CEC0175	C1421	C, AL Elyc	25V	10μF	±20%	
CEC0175	C1422	C, AL Elyc	25V	10μF	±20%	
CES0032	C1424	C, AL Elyc	25V	100μF	±20%	
CQA0091	C1425	C, Plastic	50V	1000pF	±10%	
CCC1029	C1426	C, Ceramic	50V	1000pF	+80 −20%	
CEC0175	C1427	C, AL Elyc	25V	10μF	±20%	
CCC1030	C1428	C, Ceramic	50V	10000pF	+80 −20%	
CCC1030	C1430	C, Ceramic	50V	10000pF	+80 −20%	
CCS0017	C1441	Capacitor	50V	0.1μF	+80 −20%	
CEC0175	C1442	C, AL Elyc	25V	10μF	±20%	
CCC1030	C1443	C, Ceramic	50V	10000pF	+80 −20%	
CCS0017	C1450	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1451	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1452	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1453	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1454	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1522	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1523	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1524	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1525	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1526	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1527	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1528	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1529	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1530	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1531	Capacitor	50V	0.1μF	+80 −20%	
CCC1030	C1550	C, Ceramic	50V	10000pF	+80 −20%	
CCS0017	C1551	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1552	Capacitor	50V	0.1μF	+80 −20%	
CCC1030	C1553	C, Ceramic	50V	10000pF	+80 −20%	
CEC0160	C1558	C, AL Elyc	16V	10μF	±20%	
CEC0160	C1559	C, AL Elyc	16V	10μF	±20%	
CCS0017	C1560	Capacitor	50V	0.1μF	+80 −20%	
CCS0017	C1561	Capacitor	50V	0.1μF	+80 −20%	
CCC1030	C1562	C, Ceramic	50V	10000pF	+80 −20%	

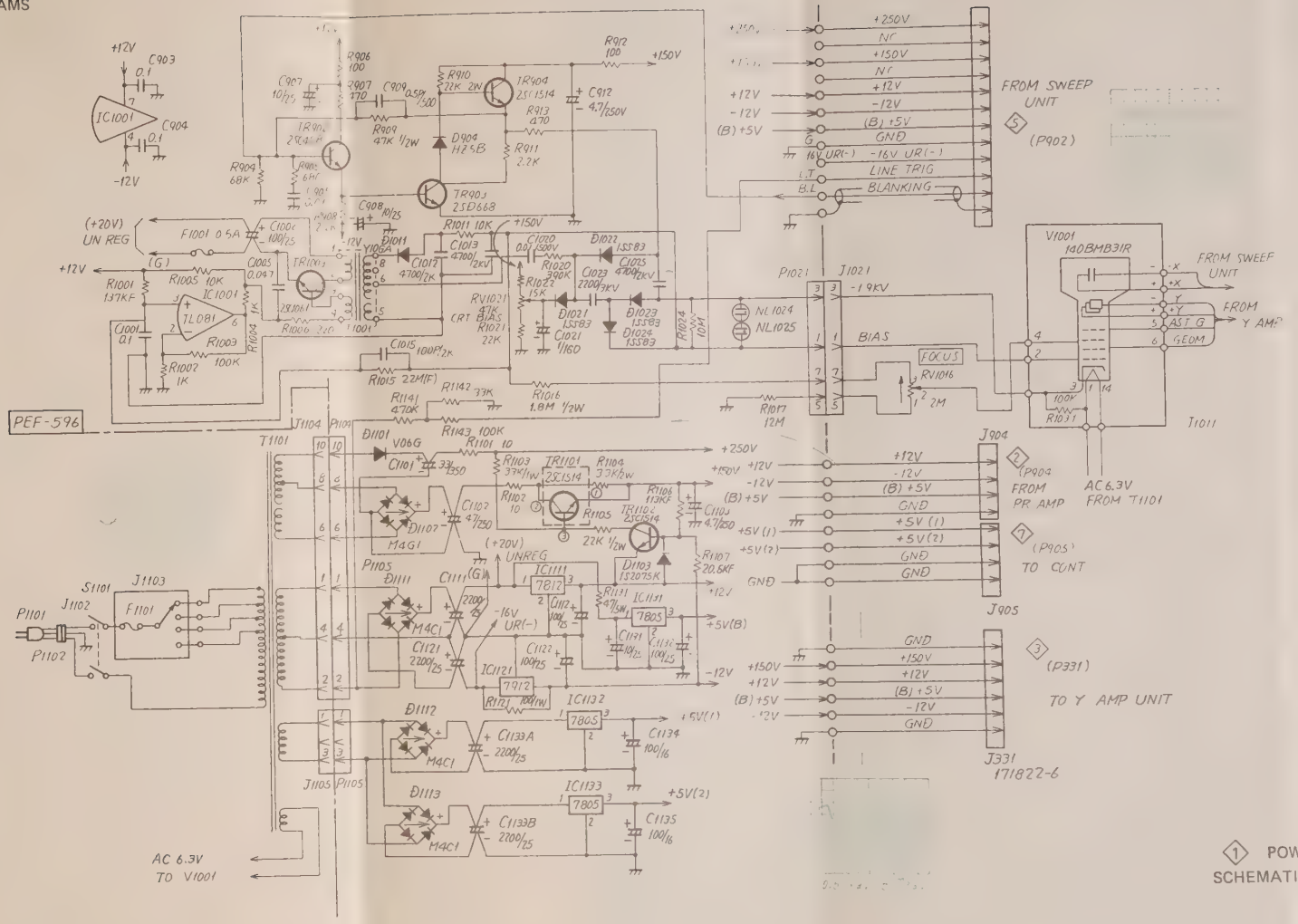
Part Code	Symbol	Description	Remarks
CCC1029	C1563	C, Ceramic 50V 1000pF +80 -20%	
CCC1030	C1564	C, Ceramic 50V 10000pF +80 -20%	
CCS0017	C1565	Capacitor 50V 0.1μF +80 -20%	
CCS0017	C1566	Capacitor 50V 0.1μF +80 -20%	
CCC1030	C1567	C, Ceramic 50V 10000pF +80 -20%	
CEC0160	C1568	C, AL Elyc 16V 10μF ±20%	
CCS0017	C1569	Capacitor 50V 0.1μF +80 -20%	
CEC0160	C1570	C, AL Elyc 16V 10μF ±20%	
CCS0017	C1571	Capacitor 50V 0.1μF +80 -20%	
CQA0103	C1572	C, Plastic 50V 0.1μF ±10%	
CCS0017	C1573	Capacitor 50V 0.1μF +80 -20%	
CQA0093	C1580	C, Plastic 50V 2200pF ±10%	
CCC1030	C1581	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1582	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1588	C, Ceramic 50V 10000pF +80 -20%	
CCS0017	C1650	Capacitor 50V 0.1μF +80 -20%	
CCS0017	C1651	Capacitor 50V 0.1μF +80 -20%	
CCC1030	C1652	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1653	C, Ceramic 50V 10000pF +80 -20%	
CCC1162	C1654	C, Ceramic 50V 470pF ±10%	
CCC1162	C1655	C, Ceramic 50V 470pF ±10%	
CES0038	C1656	C, AL Elyc 50V 2.2μF ±20%	
CCC1029	C1657	C, Ceramic 50V 1000pF +80 -20%	
CCC1030	C1658	C, Ceramic 50V 10000pF +80 -20%	
CEC0175	C1659	C, AL Elyc 25V 10μF ±20%	
CES0038	C1660	C, AL Elyc 50V 2.2μF ±20%	
CCC1029	C1661	C, Ceramic 50V 1000pF +80 -20%	
CCC1030	C1662	C, Ceramic 50V 10000pF +80 -20%	
CEC0175	C1663	C, AL Elyc 25V 10μF ±20%	
CES0033	C1664	C, AL Elyc 25V 100μF ±20%	
CES0033	C1665	C, AL Elyc 25V 100μF ±20%	
CES0033	C1666	C, AL Elyc 25V 100μF ±20%	
CES0033	C1667	C, AL Elyc 25V 100μF ±20%	
CCS0017	C1668	Capacitor 50V 0.1μF +80 -20%	
CCS0017	C1669	Capacitor 50V 0.1μF +80 -20%	
CCS0017	C1670	Capacitor 50V 0.1μF +80 -20%	
CCS0017	C1671	Capacitor 50V 0.1μF +80 -20%	
CES0033	C1700	C, AL Elyc 25V 100μF ±20%	
CES0033	C1701	C, AL Elyc 25V 100μF ±20%	
CCS0017	C1701	Capacitor 50V 0.1μF +80 -20%	
CCC1030	C1702	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1703	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1704	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1705	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1706	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1707	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1708	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1709	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1710	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1711	C, Ceramic 50V 10000pF +80 -20%	

Part Code	Symbol	Description	Remarks
CCC1030	C1712	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1713	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1714	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1715	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1716	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1717	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1718	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1719	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1720	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1721	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1722	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1723	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1724	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1725	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1726	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1727	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1728	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1729	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1730	C, Ceramic 50V 10000pF +80 -20%	
CCC1030	C1731	C, Ceramic 50V 10000pF +80 -20%	
AZC0001	X1	Xtal CSA10MT (10MHz)	
JBX0704	P201	Connector 171825-4	
JBX0704	P202	Connector 171825-4	
JBX1857	P250	Connector 3429-2002LCS	
JBX0703	P301	Connector 1-171825-0	
JBX0470	P331	Connector 171825-6	
JBX0703	P407	Connector 1-171825-0	
JBX0452	P501	Connector 1-171825-2	
JMX0292	P502	Connector 3428-2002	
JBX0468	P503	Connector 171825-3	
JBX0005	P905	Connector 350211-1	

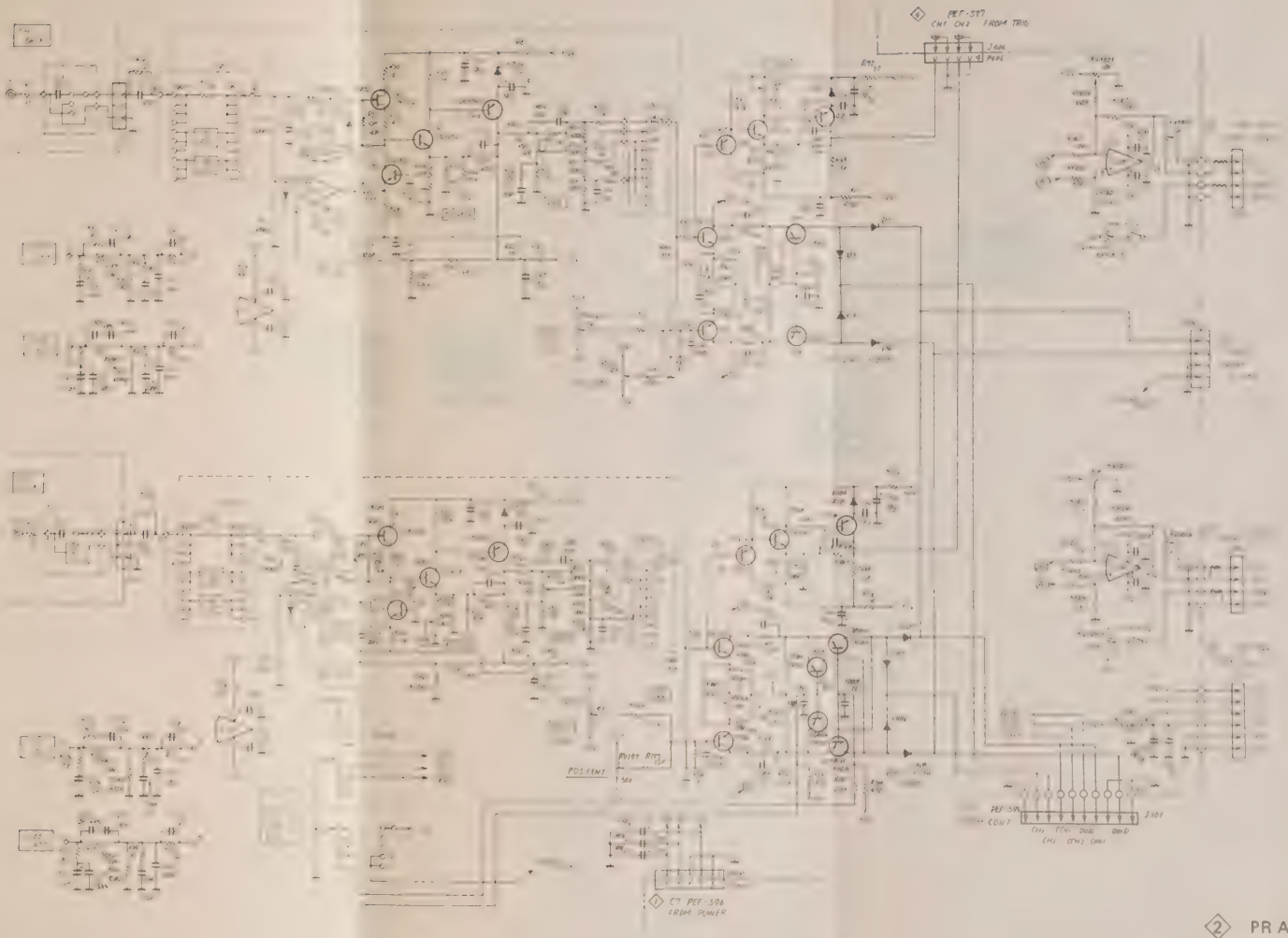
PANEL and OTHERS

Part Code	Symbol	Description	Remarks
JHB0088	J401	Coax. Con BNC071	
8338351	J402	Terminal Z-048 (Earth)	
JBX0449	J801	Connector 171822-3	
JHB0088	J901	Coax. Con BNC071	
JYX0322	J1001	Housing 171822-3	
JSP0001	J1011	Socket PS-085	
JJC0026	J1102	Connector CM3(C-170)	
3142147	J1103	Terminal S-17221 (100/120/220/240V)	
JYX0321	J1104	Housing 1-171822-0	
JMX0506	J1105	Con, Multi 1-480303-0	

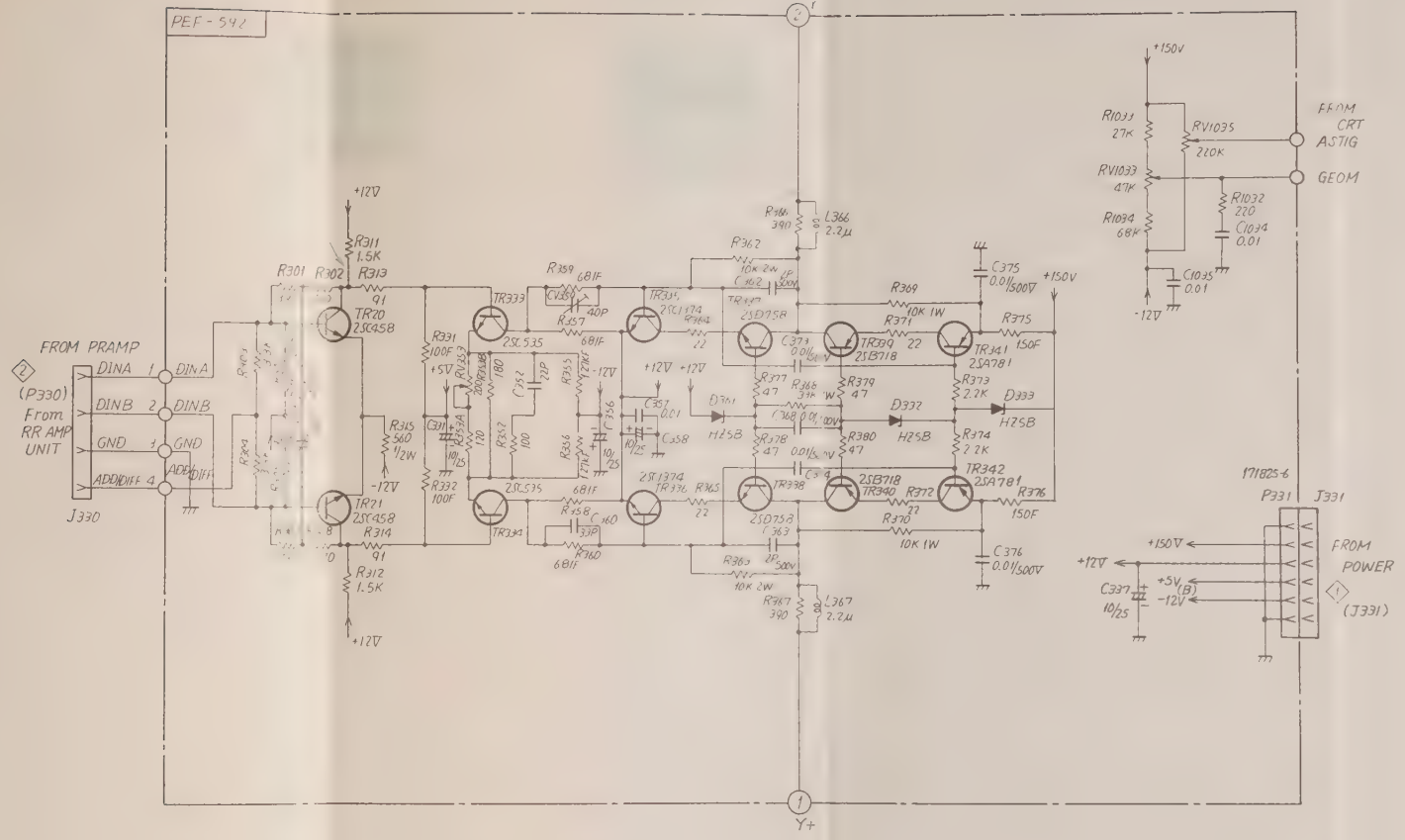
Part Code	Symbol	Description		Remarks
4114183A	J1201	Terminal	BLK (14V 80MA)	
JHB0088	J1200	Coax. Con	BNC071	
JHB0088	J1201	Coax. Con	BNC071	
JHB0088	J1202	Coax. Con	BNC071	
DPX0076	V1001	CRT	150BTB31 (1G)	
8397013	L1026	Coil	For G-Series	
RCR3028	R400	R, Carbon	1/4W 100Ω ±5%	
RCR3100	R1031	R, Carbon	1/4W 100kΩ ±5%	
RDE0064	RV518	VR, Carbon	EVH-COAK20B23 2k	
RDE0028	RV1016	VR, Carbon	EVM-R7GS20B26	
RDE0065	RV1200	VR, Carbon	EVH-COAK20B15 100k	
8408170	RV1303	VR, Carbon	EVC-BQ8P20B14	
TTV0013	T1101	XFMR	For VC-6015	
EPG0352	F1101	Fuse	MF61NM 2 (2A 250V)JIS	
8311793C	S[illegible]	SW, PB	UEG22-2 Lock	
SSV0056	S111[illegible]	SW, Slide	SSB023(2) L=6 NS PCB	
8329332	L[illegible]	Lamp	Scale 14V 80MA	
8329332	L[illegible]	Lamp	Scale 14V 80MA	
8329332	L[illegible]	Lamp	Scale 14V 80MA	
JBX0449	J1[illegible]	Connector	171822-3	
JYX0252		Contact	170205-1	
SSV0042	SW1	SW, Slide	SSB023 L=9 NS PCB	
SSV0042	SW[illegible]	SW, Slide	SSB023 L=9 NS PCB	
CQX0071	C1	C, Plastic	600V 22000 pF ±10%	
CQX0071	C[illegible]	C, Plastic	600V 22000 pF ±10%	
JHB0088	J1	Coax, Con	BNC071	
JHB0088	J[illegible]	Coax, Con	BNC071	
RCR3004	R1	R, Carbon	1/4W 10Ω ±5%	
RCR3004	R[illegible]	R, Carbon	1/4W 10Ω ±5%	
JBX0449	J2	Connector	171822-3	
JBX0449	J[illegible]	Connector	171822-3	
JYX0252		Contact	170205-1	



① POWER UNIT SCHEMATIC DIAGRAM

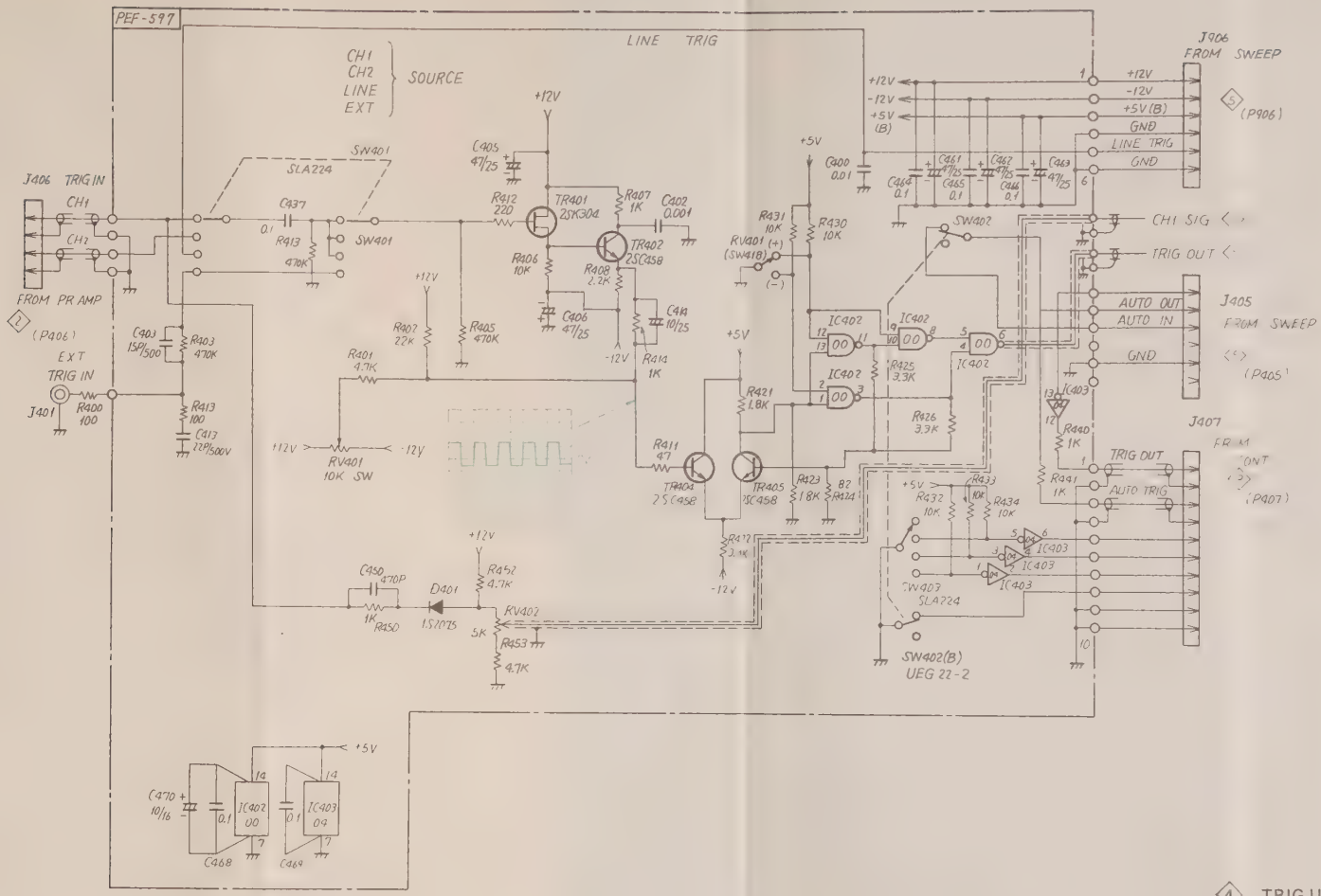


② PR AMP UNIT
SCHEMATIC DIAGRAM

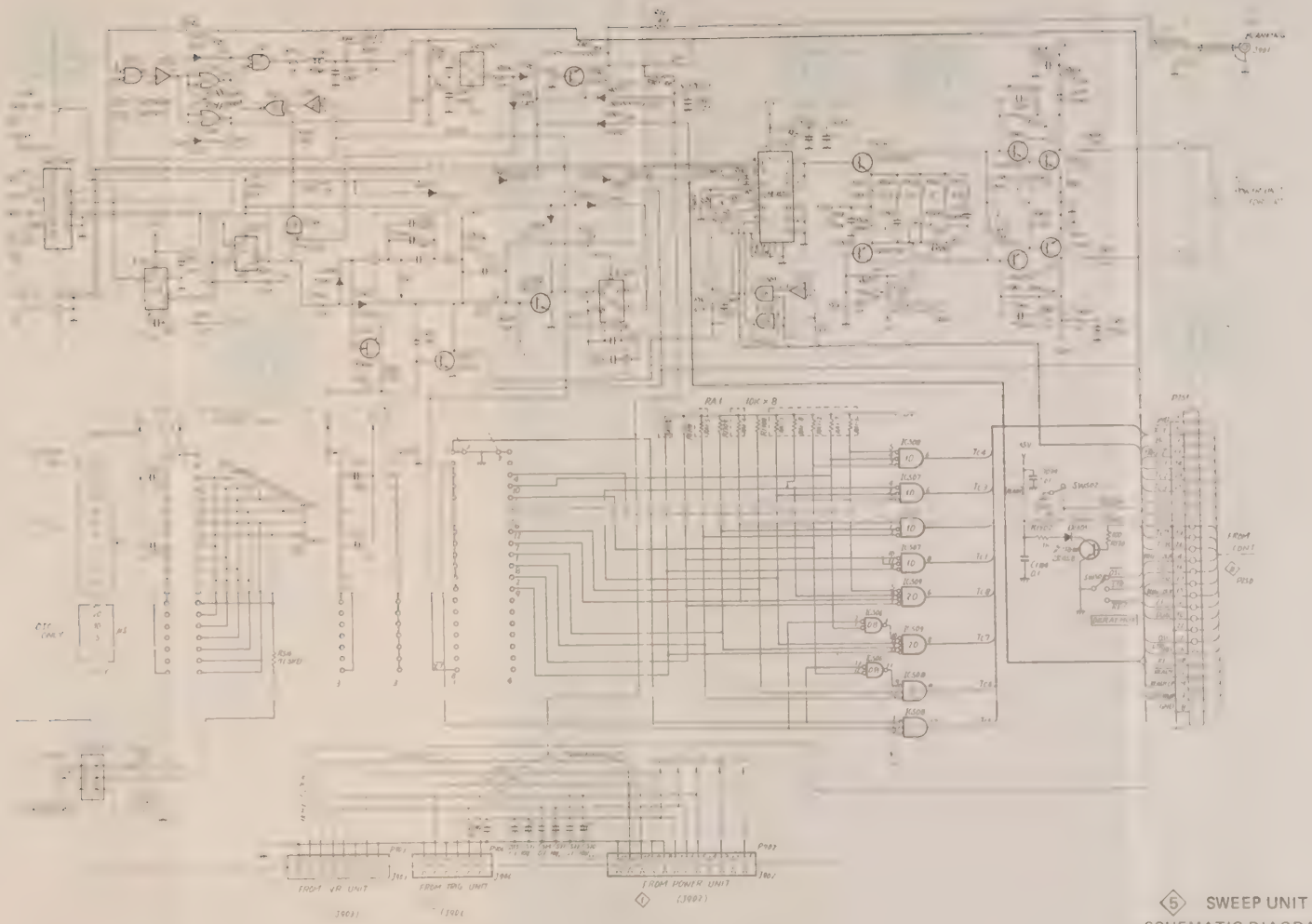


◇3 V AMP UNIT
SCHEMATIC DIAGRAM

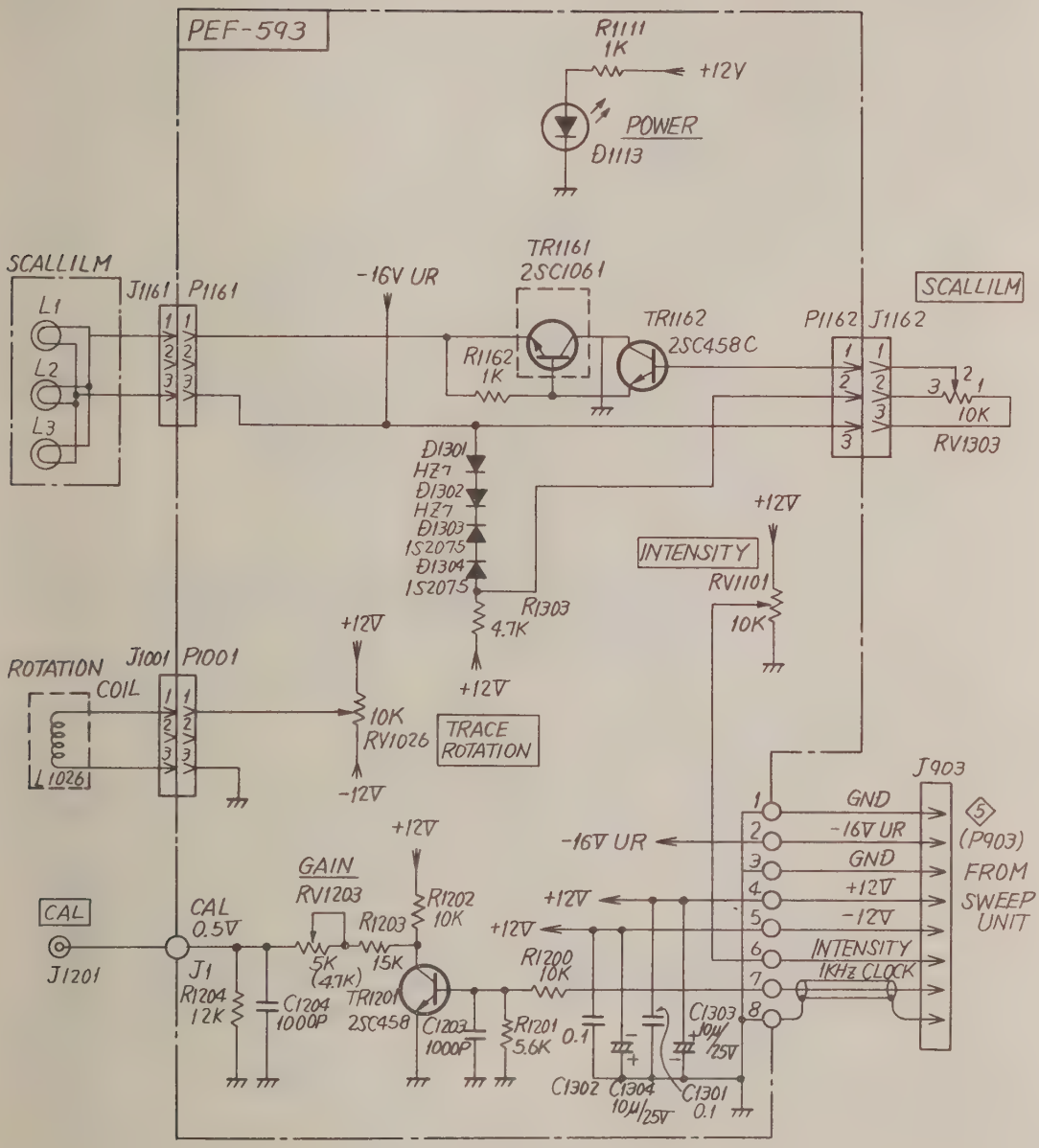
STABRO LABORATORIES



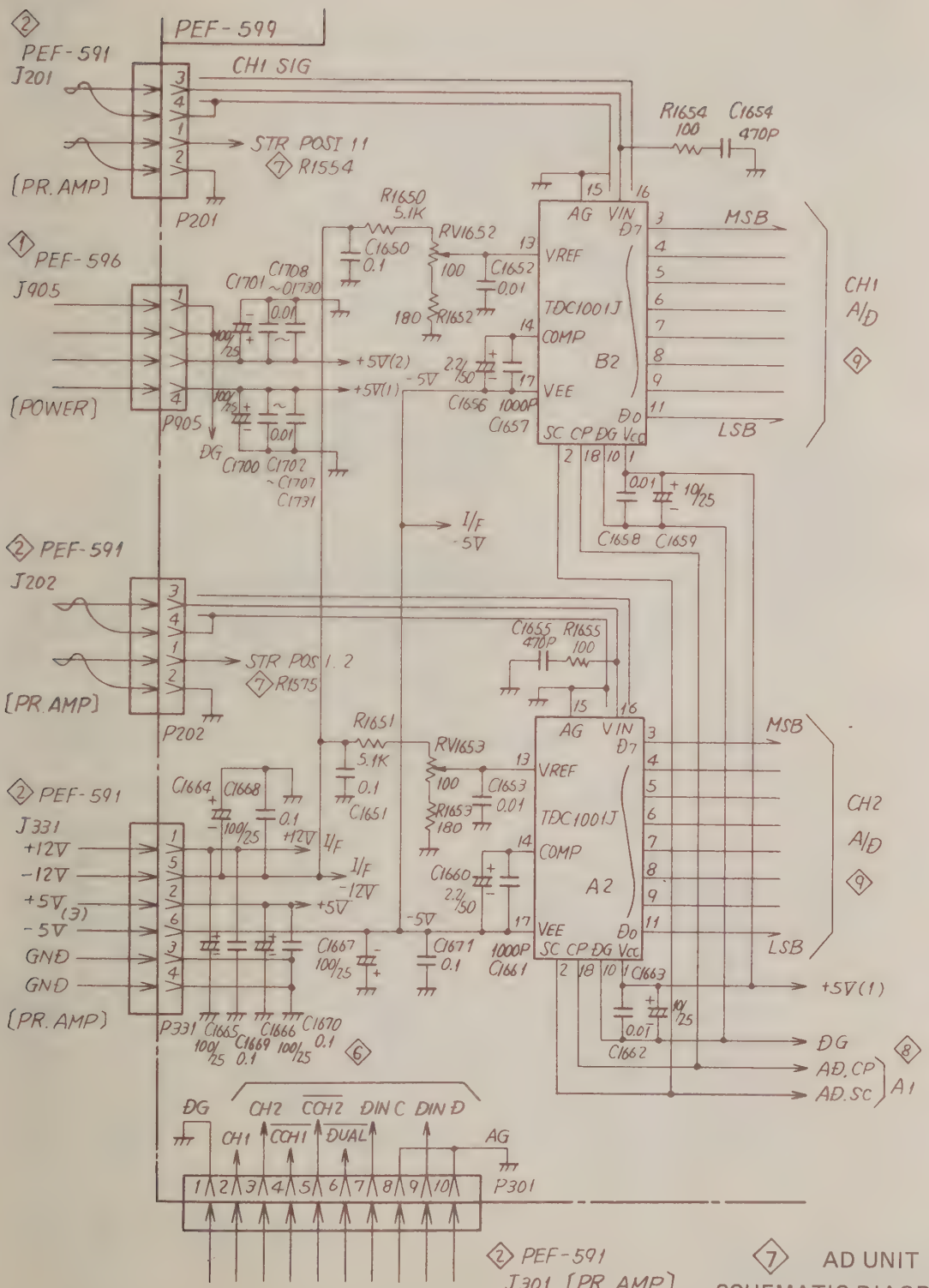
④ TRIG UNIT
SCHEMATIC DIAGRAM



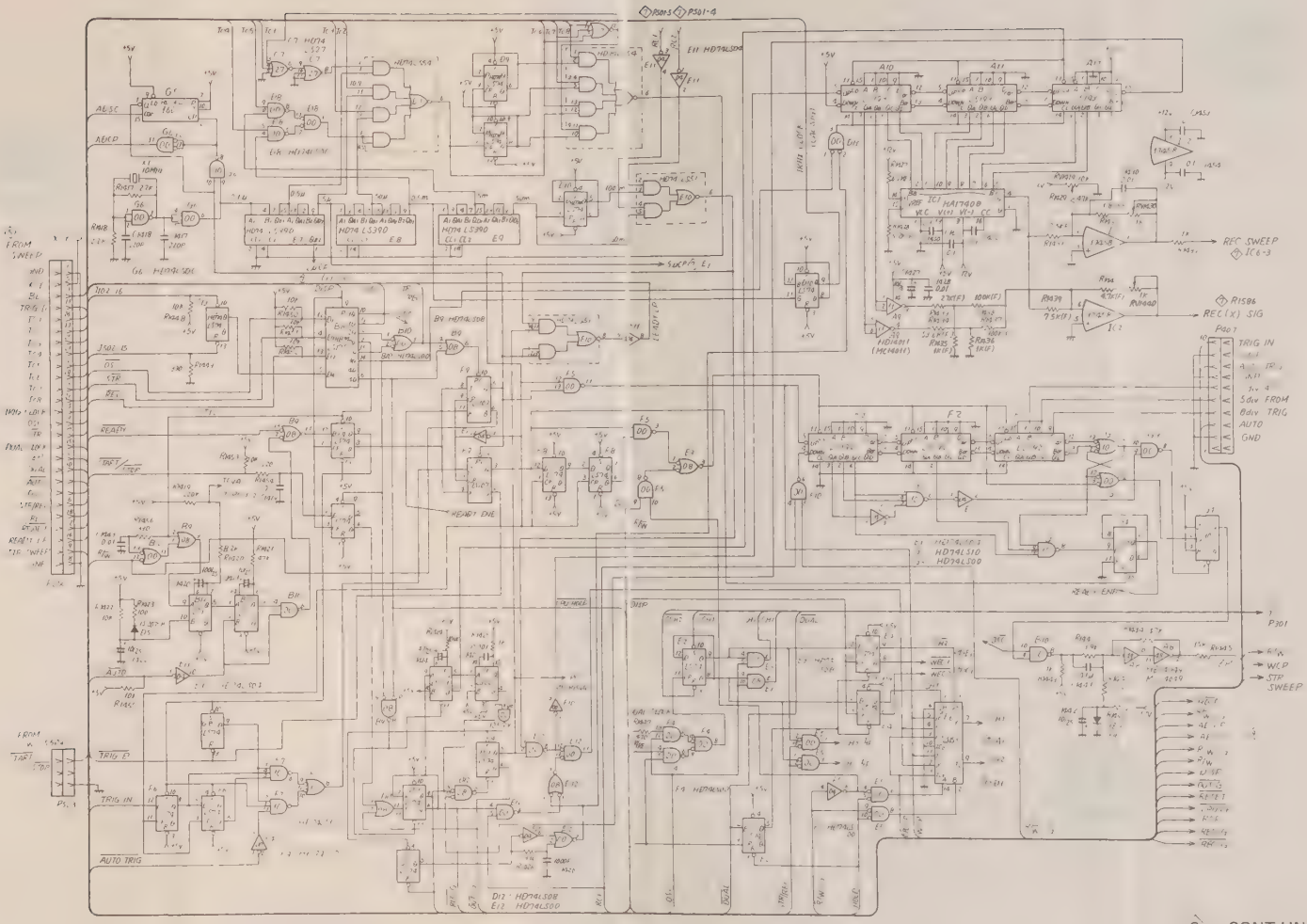
⑤ SWEEP UNIT
SCHEMATIC DIAGRAM



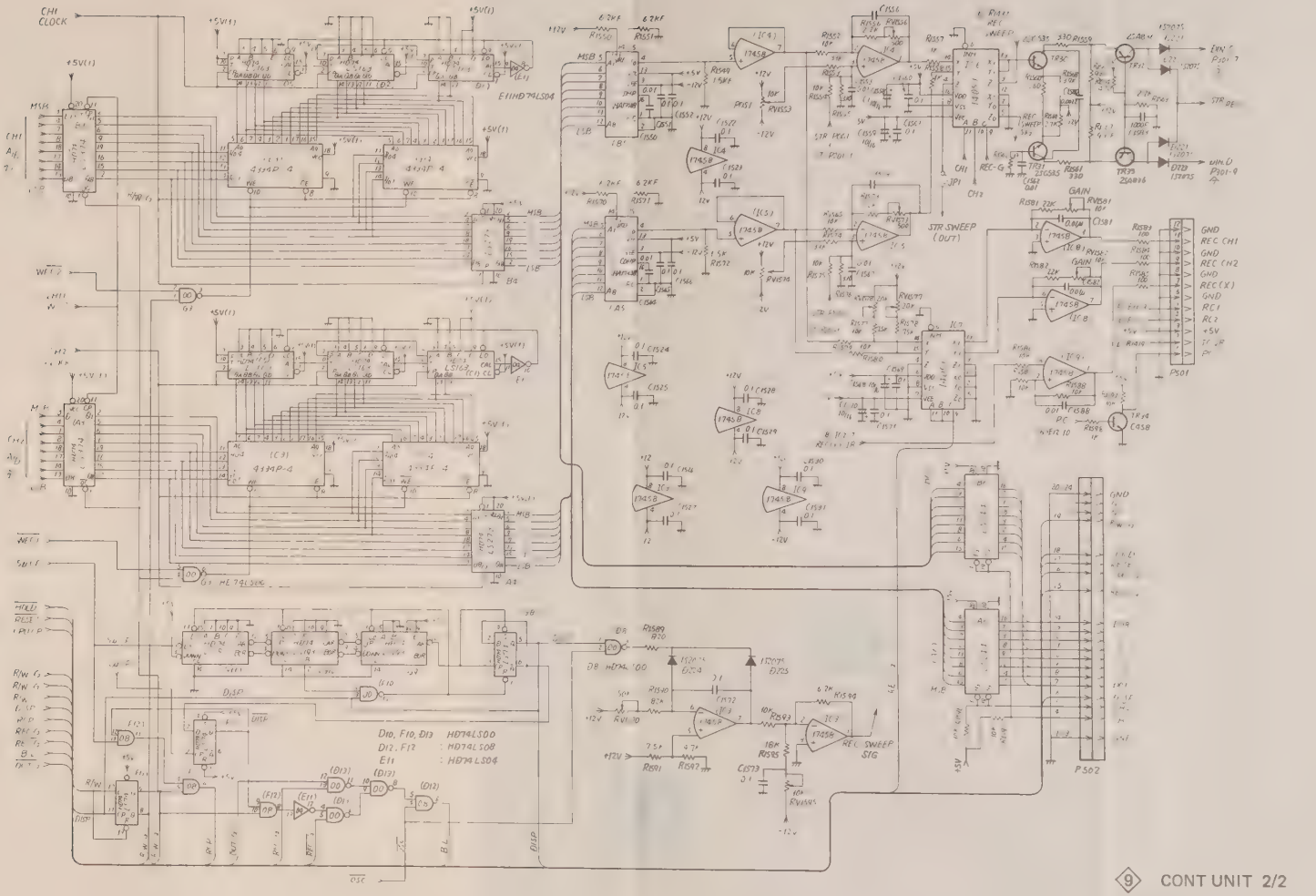
6 VR UNIT
SCHEMATIC DIAGRAM



AD UNIT
SCHEMATIC DIAGRAM



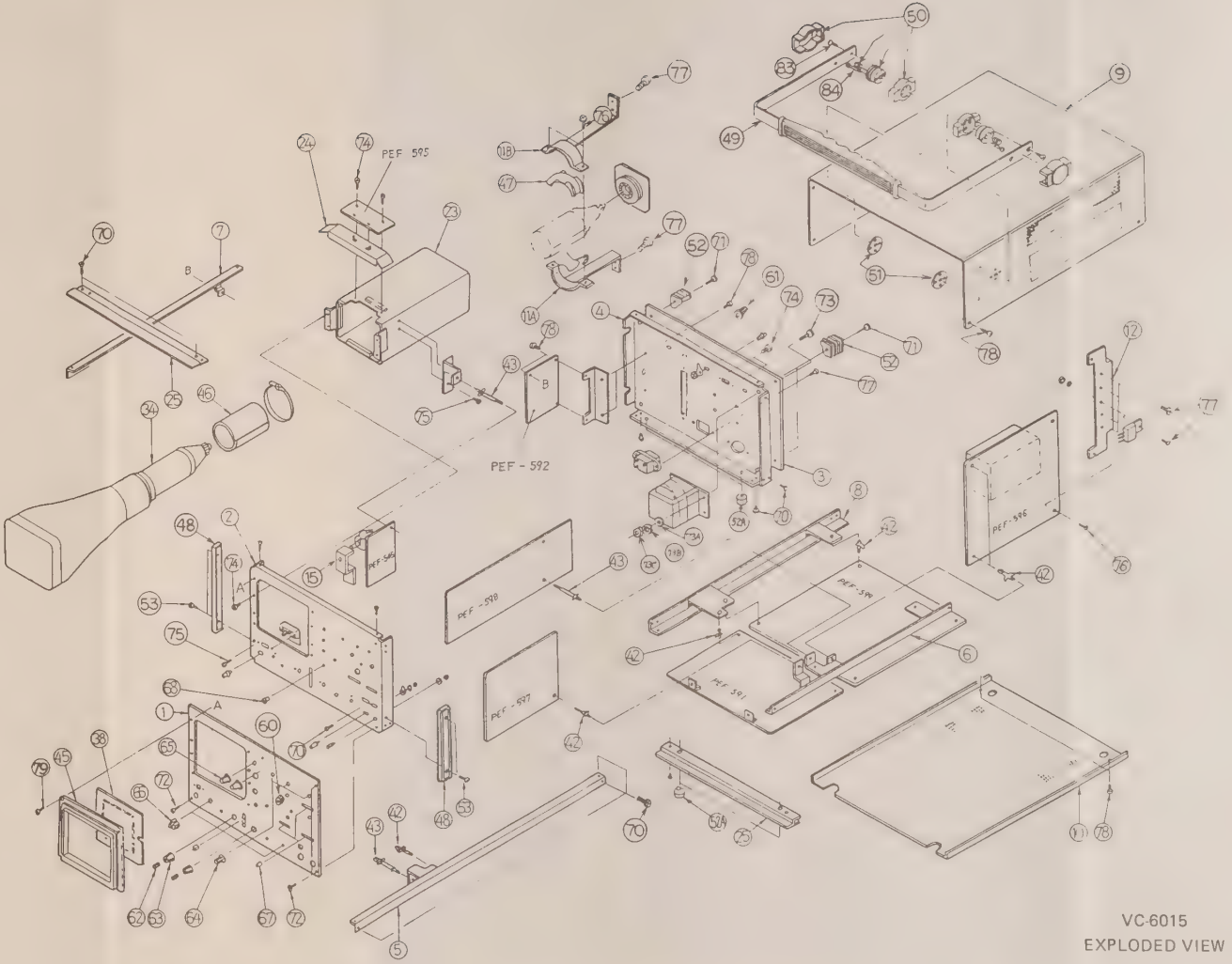
〈8〉 CONT UNIT 1/2
SCHEMATIC DIAGRAM



◈9 CONT UNIT 2/2
SCHEMATIC DIAGRAM

8. MECHANICAL PARTS LIST AND EXPLODED VIEW

Part Code	Symbol	Description	Qty	Remarks
2107773A	1	Panel, Front	1	
2107771A	2	Chassis, Front	1	
2107775A	3	Panel, Rear	1	
2107777A	4	Chassis, Rear	1	
2107778A	5	Angle	1	
2107774A	6	Angle	1	
2107780A	7	Angle	1	
2107781A	8	Angle	1	
2888681A	9	Cover, Top	1	
3149269A	10	Cover, Bottom	1	
3182786A	11A	Band, CRT.	1	
3182786B	11B	Band, CRT.	1	
8407360A	12	Heat Sink	1	
8107381A	15	Bracket	1	
3182585A	23	Shield Case	1	
8107358A	24	Plate	1	
3182784A	25	Plate	2	
3138612A	34	Rubber	2	
3113318A	38	Filter	1	
8360723A	42	Support	2	
8360730A	43	Support	2	
288060A	45	Bezel	1	
8348611A	46	Shield Band	1	
3144055A	47	Rubber	1	
3149315A	48	Cover, Side	2	
3172099A	49	Handle	1	
8177076A	50	Stopper	2	
8398476A	51	Screw Seat	2	
3149317A	52	Foot, Rear	1	
3140755A	52A	Foot	1	
8340163A	53	Rivet	1	
3149322C	60	Knob S21	1	
3140804B	61	Knob S22	1	
3149324C	62	Knob S18B	1	Red
3149323D	63	Knob URV	2	
3149321C	64	Knob S18	1	Red
3149321B	65	Knob S18	5	
3120695E	66	Knob UBL2	2	
3149325B	67	Knob LSW	1	Rubber
EER0073	68	Bush	1	
XCA6416	71	Screw, M4 x 16	1	
XCA6206	72	Screw, M2 x 6	3	
XCA6410	73	Screw, M4 x 10	1	
XCA1857	73A	Washer, M4	1	
XCA1881	73B	Spring Washer, M4	1	
XCA1707	73C	Nut, M4	1	
XCA6006	74	Screw, M2.6 x 6	8	
XCA0168	75	Flat Head Screw, M2.6 x 4	1	
XCA6306	76	Screw, M3 x 6	12	
XCA6308	77	Screw, M3 x 8	12	
XCA6310	78	Screw, M3 x 10	8	
XCA1820	79	Screw, M3 x 10	1	Black
XCA7306	70	Flat Head Screw, M3 x 6	20	
XCA7410	83	Flat Head Screw, M4 x 10	3	
XCA6316	84	Screw, M3 x 16	2	



VC-6015
EXPLODED VIEW

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